Medieval economy of Hungary as reflected by archaeology and material culture

Foreign business interests in Hungary in the Middle Ages

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Research on the operations of foreign men of business in medieval Hungary is encumbered by the scarcity of explicit written records. Whereas the keeping of accounts was customary as early as the twelfth century in the economically-developed Mediterranean regions, particularly the Italian city-states, commercial transactions were seldom put on paper in Hungary.[1] Some contemporary documents and early sixteenth-century analogies, however, indicate that by the close of the Middle Ages, various kinds of transactions were registered in urban administration records, and some simple account books were also kept. A paragraph of the Buda Statutes addressed the credibility of the account books kept by merchants in cases of legal claims.[2] Toll registers and guild books would also shed light on the range and quantity of goods appearing in the territory of the kingdom, had the majority of these sources not vanished irreversibly during the subsequent centuries.[3]

Long-distance trade, although it involved only a restricted circle of merchants and potential partners and clients, made up a considerable proportion of total trade by volume, and its few records still put it among the best-documented areas of the economy. Precious further evidence from archaeology also needs to be integrated into research. This can tell us about the variety of long-distance trade goods present in the country, and urban topographical research can also provide information about long distance trade with Hungarian towns.[4]

This analysis aims to give a general overview of several aspects of long-distance trade in medieval Hungary, relying mainly on the wealth of data concerning the activity of Italians in the kingdom, and comparing this with general features of Italian operations elsewhere in contemporary Europe. In Buda, the medieval capital of Hungary, south German merchants also had a prominent role in international trade, and this will be addressed by means of a comparative analysis of the strategies of these two ethnic groups.

Italian-Hungarian financial and business relations

Italian merchants were present all over medieval Europe, trading in a wide range of goods, providing large loans, and holding key offices in financial administration in several lands.[5] The same patterns may be observed in their Hungarian operations, but in contrast with the long historiographic tradition on the activity of medieval Italian merchants, Central Europe has until recently been a secondary target area, for a number of reasons.[6] The lag in

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[1] A fifteenth-century Florentine businessman, Giovanni di Niccolo Falcucci noted this in his tax declaration in 1427, offering a somewhat extreme picture: *"… and I have more creditors and debtors in Hungary,(…) most of them do not keep books and who has to do with them and asks for putting [the agreement], into writing has to content himself with oath, they do not trust writings …"* [transl. of the Author], ASF, Cat. 53. 1096^{v}.

[2] In the Buda Town Law a paragraph addressed the credibility of the accountant books kept by merchants in cases of legal claims, Blazovich and Schmidt 2001, II. 512. (§ 376.), see also the German edition of the Town Law: Mollay 1959. One surviving private business record is the accountant book by Pál Moritz, a Sopron retail-dealer*:* Mollay 1994. According to the entries he kept more books, which did not come to us: see Mollay 1994, 9.

[3] One surviving books of Pressburg (in Hungarian Pozsony; Bratislava, present-day Slovakia) thirtieth toll from 1457–1458 needs to be listed. For guild registers see: Kenyeres 2008.

[4] Holl 1990, 209–267; on Austrian knifes in Hugnary see Holl 1982; Feld in the present volume. Végh 2006–2008; Laszlovszky 2009, 179–203, here 190; Benda 2009–2010, 93–104.

[5] On Florentines in England's, France's, Tyrol's, Poland's state finances see: Goldthwaite 2009, 230–236. Analogical situation in Germany, see Weissen 2006, 368–369.

[6] Braudel 1974, 2109–2110; de Roover 1999, 201–202, 448. note 25; Kellenbenz 1985, 333–357; Dini 1995a, 632–655.

urbanisation and associated lower levels of consumer demand made the region less interesting, and any attempts at study have been discouraged by the lack of surviving homogeneous source material even in the more fortunate Western European archives.

Research on the activities of Italians in Hungary in the early medieval period has mainly concerned papal revenue collectors. Sienese and Florentine banking houses were among the first to appear regularly as collectors of papal revenues in Central Europe.[7] The houses of the Alfani, Acciaiuoli, Bardi, Mozzi, Frescobaldi and later on the Spini, Del Bene and Medici managed the papal incomes in the region throughout the Middle Ages.[8] In Hungary, however, they rarely established long-term commission agents in the early Middle Ages.[9] In periods of conflict between the Holy See and Florence, the Pope also commissioned individual businessmen in Hungary, such as Francesco di Bernardo da Carmignano from the last decades of the fourteenth century, and Filippo di Giovanni del Bene.[10] Francesco di Bernardo established himself in Hungary and a became a leading figure in the lucrative area of managing the ordinary royal revenues. For some years he also acted as an agent of Vieri di Cambio de' Medici's firm.[11] When Filippo del Bene came to Hungary in 1405, he first worked for the Spini banking house.[12] As early as 1410, however, he was operating in the region as *familiaris* of Pope John XXIII.[13] The Medici also had agents in neighbouring areas, such as Poland.[14] Over a period of several centuries, the sums collected in Central Europe were mainly transferred to Venice in form of precious metals. Venice played the role of intermediate banking centre between Central Europe and regions of Europe such as Italy and the south German lands. From Venice, the sums were transferred by Venetian banking houses and Venetian branches of Florentine banking houses in the form of assignments. For the Florentines, participation in collecting papal revenues secured a precious knowledge of the business opportunities in various European regions and provided the financial basis for their Europe-wide banking and commercial transactions.[15]

In addition to its participation in the transfer of papal revenues, Venice soon became the most important commercial partner of the Hungarian kingdom, despite somewhat fractious political relations due to both parties' ambitions regarding the Dalmatian territories and the Adriatic ports.[16] In 1107, Hungary acquired the northern part of Dalmatia with some of the Dalmatian port towns. This was before the Dalmatian cities' economic development started, and long before the first mentions of Dalmatia's direct economic relations with the Kingdom of Hungary.[17] By dominating these territories, the Hungarian kings were seeking to secure direct access to the Adriatic, one of their key political ambitions. The sea ports, particularly Senj and Zadar, were also a vital part of Venice's strategy of controlling some of the main overland trading routes to both the German territories and Central Europe.

Venetian-Hungarian trade contacts

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[7] Fejérpataky 1887, 653.

[8] On the Acciauoli see: Várszegi and Zombori 2000, LXVII. On the Frescobaldi: Kristó et al. 1990–2010, II. nr. 679, June 28. 1309; nr. 694, July 12. 1309.

[9] Stefanik in press, 79.

[10] On Francesco di Bernardo da Carmignano see: Trexler 1974, 79–80.

[11] Melis 1962, 345, 393.

[12] ASF, Signori, carteggi, missive-I. cancelleria Filza 26. 136^{r}–136^{v}.

[13] Mályusz et al. 1951–2009, II/2. 7968. Oct. 7. 1410; IV. nr. 357. March 28. 1413; IV. nr. 399. April 6. 1413; IV. nr. 437. April 13. 1413; IV. nr. 458. April 17. 1413.

[14] In Poland, the overwhelming presence of Genoese in the thirteenth-fourteenth centuries is a clear indication for the importance of a different transcontinental trading route, which linked Flanders with Eastern Europe, and with the Genoese colonies at the Black See through Cracow. Sapori 1967, 149–176.

[15] Dini 2001, 105–106.

[16] Rady 2000, 90.

[17] Engel 2005, 36.

Hungary's rich deposits of precious metals) attracted foreign businessmen, among them Italians and south Germans, from the thirteenth century onwards.[18] Exports were of silver and copper, joined by gold after its discovery in the early fourteenth century. Some information is available on Italians' presence in Hungarian towns even in the early period, although most comes from narrative sources.[19] Despite the constant conflict of interests, the intense commercial relations between Venice and Hungary were motivated by the Venetians' need for Hungarian copper, silver (later also gold) in order to finance the Levantine trade and the yearly *mude* of the *Serenissima*. The agreement which Andrew II of Hungary (1205–1235) made with Venice in 1217 included measures regulating trade between the two states. Venetian merchants were exempted from import duties on for several luxury wares from Italy and the Levant, such as precious silk, species, precious stones, pearls and gold needed especially at the Hungarian royal court, but the exemption was not extended to the trade in silver. The text of the agreement is usually considered the first evidence of Venetian merchants' presence in Hungary during the Árpád era.[20] Their activity in the kingdom in the following decades is recorded in Hungarian customs registers (1255 – Esztergom customs); accounts for wares shipped by a Zadar merchant to Junior King Stephen (1262–1270) in 1264 (he later became King Stephen V, 1270–1272); and Venetian government decisions to provide compensation to its citizens who suffered losses in Hungary, by means of repercussions against Hungarian merchants in Venice.[21] As the entries in western Hungarian customs registers (Esztergom customs) show, the main route for Venetian goods was initially through Austria, but as many Venetians established themselves in Senj, routes were established via Senj and Slavonia, and to a lesser degree through Zadar and Zagreb.[22]

In the first decades of the fourteenth century, however – after the sudden death of the last ruler of the House of Árpád, King Andrew III (1290–1301), known as "the Venetian" because of his descent from the Venetian patrician family of Morosini on his mother's side – Venetian-Hungarian trade relations ceased somewhat abruptly, although Venetian goods were still available in Hungary, just as Hungarian precious metals and – from the mid-fourteenth century – Hungarian cattle found their way to Venice. This trade involved Florentine and Southern German middle-men (from the mid-fourteenth century onwards mostly from Nuremberg), and to a lesser extent other Viennese and Hungarian businessmen.[23] So indirect contact was preserved. Some researchers consider that the invitations and safe-conduct guarantees the Hungarian king repeatedly offered Venetian merchants between the 1340s and 1360s refer to difficulties encountered by Venetians in the Dalmatian coastal territories, and far from indicating a strong presence of Venetian merchants in Hungary, actually imply their absence, since they are hardly mentioned in other records.[24] The decreasing presence of Venetian businessmen in the kingdom is usually explained by three major factors. The first was the Hungarian Angevins' policy on Dalmatia and its cities, leading to protracted military conflicts with Venice and increasing insecurity for Venetians within the kingdom.[25] Secondly, the monetary reforms introduced by King Charles Robert I (1307–1342) included a prohibition on the export of silver and gold bullion, contributing to the decline of direct economic relations.[26]

[18] Paulinyi 1972, 561–608; Draskóczy 2004a, 61–77; Stefanik 2004a, 210–226.
[19] Nagy 2009, 169–178, here 175.
[20] Teke 1979, 18.
[21] Weisz 2003, 973–981; Zolnay 1965, 79–114.
[22] Glaser 1929, 138–167, 257–285; Teke 1979, 24–25.
[23] Stefanik 2004a, 212, 220; Stefanik in press, 80. On cattle trade see Engel 2005, 249.
[24] Teke 1979, 30–31.
[25] Pach 1975, 105–119.
[26] Engel 2005, 155–156.

Finally, but equally importantly Venice shifted its economic strategy in the mid-thirteenth century. Through the *Fondaco dei Tedeschi,* it began to rely on mediating foreign merchants for the silver and later copper it needed from Hungary for its Levantine trade, and precious metals also came in from the Serbian mines through merchants based in Dubrovnik (medieval Ragusa).[27] Venice strove to concentrate long-distance trade and the exchange of Levantine goods and western products on its own territory by means of the same *Fondaco dei Tedeschi,* by staple rights, and by its commercial fleet. Venetian businessmen were present in Western Europe, East-West trade being their main focus, but tended to avoid a personal presence in Central Europe until the end of the fifteenth century.

These factors contributed to the further decline in the Venetian-Hungarian relations in the early fifteenth century, culminating in open conflict between Venice and the Hungarian ruler Sigismund of Luxemburg (1387–1437) in 1412. Sigismund imposed a trade embargo against Venice which lasted until 1433.[28] In the second half of the fifteenth century (the 1470s), there was a revival in trade between Hungary and the *Serenissima*, mainly involving cattle.[29] The relations between the two states improved only under the reign of the Jagiello dynasty in Hungary. Through a treaty of 1501, Venice offered an annual subsidy to the Hungarian king.[30] Consequently, some Venetians, like the de la Seda brothers, reappeared in the kingdom and remained there until the early 1530s, due also to the role of Lodovico Gritti, natural son of the Venetian doge, Andrea Gritti, as governor of Buda (1529–1534).[31]

Genoese-Hungarian trade contacts

Another Italian city state, Genoa, also supplied Levantine goods to the East-Central European region through its Black Sea colonies. This is known from somewhat sparse evidence from the toll privileges of Sibiu, an important post on the transcontinental route passing through Transylvania.[32] There is also sporadic evidence on Italian businessmen from cities different other than Florence and Venice, but except for the Genoese, no tendency of regular business activity on their part has yet been detected.

Florentine-Hungarian trade contacts

We have already seen that Florentine businessmen acted as papal tax collectors in Hungary. The role of Hungarian precious metal mines and the monetary reforms introduced by the Angevins were first assessed in the 1910s, when they were interpreted as having been backed by Florence in order to promote and support the ambitions of the Neapolitan Angevins in Hungary. The Florentines may have lent the Angevins financial support in accessing the Hungarian throne so as to gain access to Hungarian gold production.[33] The Florentines' traditionally good relations the with the Neapolitan Angevins, the wide-ranging privileges they enjoyed in Naples, and their role as close financial advisers to the Angevin kings, naturally support such a view of their ambitions.[34]

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[27] Teke 1975, 143–152.

[28] Wolfgang von Stromer proposed the theory of a continental embargo as the shift in the main inland commercial routes by opening of a new Levantine route, which was debated by Zsigmond Pál Pach. von Stromer 1986; Pach 2007, 9–32. Teke 1979, 35-36.

[29] Kubinyi 1998, 109–117, here 110–111; The few archaeological evidence of Venetian ducats confirm the scarcity of direct trade connections in the fourteenth-early 15th centuries, see Gyöngyössy 2008, 104–108.

[30] Engel 2005, 360.

[31] On Gritti see Szakály 1995.

[32] Székel 1973, 37–57; Pach 1975.

[33] Hóman 1917, 531–561. On the role of the gold mines in Upper Hungary see Spufford 1989, 267–289; Stefanik 2004b, 295–312.

[34] Trexler 1974, 84–87; Abulafia 1981, 377–388; Abulafia 1993, 418. Recently Goldthwaite 2009, 232.

This view has been disputed, however, because in the first half of the fourteenth century, struggling and threatened by anarchy, Hungary could hardly have been an attractive prospect for prospering Florence or Italian merchants in general.[35] There is in fact information on a few Italians, mainly of Florentine origin, becoming counts of mining and minting chambers, but the sources and the persons mentioned in them are isolated and scarce. The first appearance of Florentines in the territory of the Kingdom of Hungary in any significant numbers has recently been dated to the 1370s, at a time when the traditional Italian and Mediterranean markets for Florentine textiles were contracting.[36] After the economic depression of the mid-fourteenth century and the subsequent bankruptcies, Italian companies, particularly those based in Florence, quickly resumed their leading role in international commerce. Long-distance trade with traditional markets like England and Flanders, however, faced severe transport problems during the 1360s and 1370s[37] as a result of conflicts like the Florentines' war with Pisa (1356–1369). An emerging overproduction crisis coupled with difficulties in reaching markets intensified the general economic depression.[38] On top of all these troubles, Florence came into conflict with the papacy. The Florentines thus sought new, possibly less prestigious, target areas for their wares.

Hungary also posed a transport problem for Florentine and other Italian merchants in the 1360s and 1370s because it was at war with Venice, which at that time controlled the Adriatic ports, especially Zadar and Senj. The peace of Turin (1381) must therefore have been a further important factor behind the intensification of Italian long-distance trade with the interior of Hungary. The Dalmatian ports and some inland cities along the trade routes also took an increasingly prominent role in Italian-Hungarian commercial exchange as intermediate centres.[39]

Information on Florentines in Hungary from the late Angevin period and the first decade of Sigismund of Luxemburg's reign mainly concerns businessmen taking leases on "ordinary" royal revenues.[40] A company for the marketing of Hungarian copper was founded by the Florentine Vieri di Cambio dei Medici and partners between 1385 and 1387. The company of Vieri di Cambio did not get involved into the exploitation or refinement of the metal. They provided credits to small-scale local entrepreneurs in exchange for the copper, which they then sold.[41] They were followed in this business by two Nuremberg companies, Kammerer-Seiler and Flextorfer-Zenner, and – at the turn of the century – the Genoese company Gallici.[42] The same pattern is to be observed in the case of the customs on international trade (thirtieth) and the minting and salt chambers, lucrative ventures for businessmen of both ethnic groups.[43] Italians and Germans in Buda also alternated as salt chamber counts, an area which they dominated from the close of the fourteenth century.[44] Some Florentine businessmen, such as Nofri di Bardo and his four sons, and Filippo Scolari, wielded great influence on the royal financial organization and opened up lucrative commercial channels for their countrymen in Hungary. Scolari held senior military offices, but was also *comes pecuniae* in 1398, and as *comes salium* he managed Hungarian salt mining from 1401 to 1426.[45] The influence he had on the Hungarian economy, and the extent of his

[35] Huszti 1941, 58–59; Paulinyi 1972, 215–216.
[36] Teke 1995a, 129–151, here 135–137.
[37] Fryde 1983, 306–309; Dini 1995b, 173.
[38] Hoshino 2001, 67–73; Dini 2001, 103–124, here 111–115.
[39] Teke 1998, 233–243; Raukar 1995, 676; Draskóczy 2004b, 287–288.
[40] On the management of royal revenues see Engel 2005, 153–155.
[41] Paulinyi 1933, 34; Teke 1995a, 136; see also von Stromer 1985, 370–397.
[42] Blanchard 2005, 1181.
[43] Huszár 1958, 50; on the same see also von Stromer 1973/1975, 85–106. Mályusz 1958, 301–309.
[44] Draskóczy 2004b, 288–289;
[45] Engel 1987, 53–89.

own trading activities, have been the subject of recent detailed studies, as has the network of familiars he employed in the management of the salt chambers.[46] There is a theory that Italian, and particularly Florentine, businessmen holding leases on the royal monopoly of precious metal mining at the turn of the fourteenth and fifteenth centuries were in competition with south Germans who sought the same positions.[47] Recently however, in the light of new findings, the image of a sharp conflict of interests between south Germans and Florentines has been revised, as we shall see in our discussion of affairs in Buda.[48]

In the course of the fifteenth century, however, the office-bearers and their relationships to the king changed fundamentally. The management of the royal revenues, particularly the salt chambers, were reorganised in the late 1420s.[49] Changes to system of financial administration in King Matthias' reforms of 1467–1472 resulted in the previously honorary office of treasurer (*thesaurarius*) acquiring real competencies that included coordination and supervision of the officials of the royal chambers.[50] Consequently, lower members of the administration lost their direct accountability to the king. Moreover, the offices started to be filled by an emerging Hungarian educated elite, and most of the Florentines withdrew. At the turn of the fifteenth century, the great south German firms acquired the management of – indeed a monopoly in – mining.

Towards the close of the Middle Ages, the efficiency of the mining and minting chambers, the thirtieth toll, and particularly the formerly very lucrative salt chambers, was in decline. The chambers were pledged, leased or put under the administration of salaried office-holders, *familiares* of the royal treasurer.[51] At the turn of the century, and particularly in the decades prior to the defeat at Mohács in 1526, these chambers were providing a relatively low profit to the royal treasury, but incurring high maintenance costs.[52]

The interests of medieval Florentine businessmen in Hungary were not restricted to the lease of royal revenues. Through their international contacts, they had a major share of the trade in luxury goods, particularly textiles, and they were also bankers. This is best studied through the role they played in Buda, evolving as the Hungarian royal seat and a commercial centre lying at the intersection of significant trading routes.[53] In fact Italian merchants based in Buda could supply the demand for luxury goods throughout Hungary in this period.[54] An example is the Florentine *accomandita* partnership founded by Lorenzo e Filippo Strozzi e Piero Pitti, which in its first phase operated only in Buda, with capital of 1900 florins, but in its second phase, although still based in Buda, extended its activity to the whole kingdom, with capital of 3000 florins.[55]

Finally, the Florentines' reactions to local socio-economic conditions in the medieval town and royal residence of Buda and their movements within society, compared with the position of the local urban elite, particularly the section of south German origin, provides an insight into the character of Hungarian trade.

Italians and south Germans in medieval Buda

[46] Draskóczy 1994, 125–135; For Scolari's Hungarian familiares in the management of the salt chambers see Engel 1987, 72; Draskóczy 1998.
[47] von Stromer 1970, von Stromer 1971, 79–87.
[48] Draskóczy 2001, 158–159; Arany 2006, 101–123.
[49] Engel 2005, 224; Kubinyi 2009a, I. 353.
[50] Kubinyi 1957, 25–49, here 25.
[51] Kubinyi 2009a, I. 353–354.
[52] Draskóczy 2005, 83–117, especially 83–91.
[53] Nagy 1999, 347–356.
[54] Kubinyi 2009d, I. 337–359, here 351.
[55] Dini 1995a, 639–640.

The town of Buda was founded by King Béla IV (1206–1270) in the mid-thirteenth century, after the Mongol Invasion.[56] Most of its first settlers were of German origin, predominantly from Regensburg, and so only a minority of its inhabitants were Hungarian. The town had the same royal privileges as were granted to Pest, which lay opposite Buda on the left bank of the Danube. Pest was considered a more important commercial centre than Buda during the medieval period, despite the fact that by the fifteenth century, the majority of long-distance commercial transactions were being carried out in Buda, and Buda merchants definitely played a leading role in the kingdom's large-scale commerce, mainly due to the presence of the royal court.[57] How did this apparent paradox come about?

Buda had long been a notable centre of long-distance trade, and enjoyed staple rights. By the fifteenth century, it had also developed into the permanent residence of the Hungarian king. Royal urban policy and the gradual acquisition of central administrative and commercial functions turned Buda into one of the leading cities in Central Europe during the fifteenth century.[58] The urban administration and leadership of Buda at that time, as in most towns of the region, was largely composed of German burghers; although the surviving lists are incomplete, Germans clearly held the main urban offices and formed a large proportion of the medieval council.[59]

Under the Angevin dynasty, Buda gradually gained in importance in the fourteenth century, starting with the establishment of the minting chamber. This issued the Hungarian golden florin (from 1326), which was most probably based on the Florentine florin. The availability of leases on the minting and mining chambers, attracted Italians, mainly Florentines, to the town. Another motivation was long-distance trade, in which Buda's patriciate had little interest, a fact generally explained by the ready supply of commercial goods secured by the town's staple rights.[60]

Sources show that the presence of Italians had, by the close of the fourteenth century, given rise to a Strata Latinorum in Buda, as in other towns of the region.[61] Indeed, it was one of the town's principal streets. Research has clearly shown, however, that there were Italians living in other parts of the town, too, and most residents in the Strata Latinorum were Hungarians; some were actually Germans.[62]

In the second half of the fourteenth century, the Italians in Buda were mainly concerned with the trade of luxury goods, particularly textiles. The demand for these was further boosted by the establishment of the permanent royal residence there in the years 1405–1408.[63] Buda also became the centre of royal administration and the location of the highest offices of the judiciary and financial administration. Being the judicial centre of the kingdom meant at first the occasional, and later the regular appearance of landed aristocracy; while attending to their legal affairs in the town, they formed an additional market for goods imported by foreign merchants. This was further reinforced by the transfer of the diets to Buda and Pest, or sometimes the nearby field of Rákos.[64]

It is thus not surprising that the number of Italians arriving in Buda increased dramatically in the first half of the fifteenth century. Three Florentine companies set up in the

[56] Végh 2009, 89–101; Rady 1985.
[57] Kubinyi 2009d, I. 351.
[58] Kubinyi 1971, 342–433; For other Hungarian towns see Petrovics 2009, 67–87; on the linguistic aspect of multiethnic Hungarian towns see Szende 2009, 205–233.
[59] On the role of Germans in Hungarian towns see Kubinyi 1996, 159–175; For the lists see also Rady 1985, Appendix II. 169–176; Végh 2008, 90.
[60] Kubinyi 2009a, I. 96. (Original publication: Kubinyi 1972)
[61] See Sapori 1967, 151.
[62] Végh 2006–2008, I. 245–247.
[63] Engel 2005, 241.
[64] Kubinyi 1990, 79–81.

town in the 1420s: the Carnesecchi-Frontes, the Melanesis and the Panciatichis[65], making Buda the only Central European trading centre with such an intensive Florentine presence.[66] Later in the fourteenth century, however, they were joined by a new German elite (mainly from Nuremberg, although we find Buda burghers from Basel, Passau, Vienna and elsewhere), which fully integrated and displaced the old (fourteenth-century) patriciate from the leadership of the town. Although they were somewhat passive in long-distance trade, they were eager to use their high urban offices as an entry into Hungarian nobility. It would be interesting to investigate the relations between the Italians (mainly Florentines, together with some businessmen from Venice, Genoa, Arezzo and Siena in the early fifteenth century; but with increasing numbers of Venetians at the end of the century) with the other ethnic groups in the town, particularly the Germans.[67]

The theory of competition between south Germans and Italians in the region has mainly been applied to their relative situation in late medieval Buda, partly on the basis of the Buda Statutes (*Ofner Stadtrecht*) compiled in the early fifteenth century. The Buda Statutes made a clear distinction between *Gewölbherren*, long-distance merchants of foreign origin specialising particularly in luxury textiles, and local *Kammerherren*, who mainly traded lesser-quality wool in the town and had citizenship of Buda.[68] The theory was further reinforced by the events of 1402–1403 leading to the expulsion of the Italian inhabitants of Buda and the seizure of their property,[69] interpreted as resulting from business competition among German and Italian merchants in the town.

More recent evidence, however, has required at least a partial revision of the idea of business competition, particularly in the context of Buda, because the two ethnic groups' commercial ambitions and the strategies they developed to attain them seem to have been mutually complementary rather than hostile.

The information gathered so far seems to indicate that, rather than competing with each other, the Italians and south Germans of Buda carved up the markets between them. The Germans mainly focused their activity on the sale of lower-value woollen cloth, even cloth from North Italy (Verona), and left trade in luxury goods and prestigious textiles to the better-capitalised Italian merchants. The Florentines had access to a great many investors in their homeland through highly-developed banking facilities and the large business networks of which they were a part. They were also active in the provision of large loans to the crown and also to the members of the Hungarian aristocracy and foreigners visiting the Hungarian royal court.[70] Sources on their activity reveal occasional banking services – provision of assignments and bills of exchange – for prominent foreigners staying at court.

Leases on royal monopolies were held by both Germans (Marcus of Nuremberg, Johann Siebenlinder and Michael Nadler, six times judge of Buda) and Italians (Francesco di Bernardo da Carmignano, Filippo di Stefano Scolari, Tommaso di Piero Melanesi, Filippo di Simone Capponi, Fronte di Piero Fronte) resident in Buda.[71] This is another area where the

[65] Based on the systematic research of the Florentine Catasto of 1427 and the Hungarian charter collection, at present we know of 81 Florentine persons (43 families) operating in the territory of the Hungarian kingdom in 1371-1450. See Arany 2007, 483–549.
[66] Arany 2008, 277–296, here 291–296.
[67] South Germans at that time already had a long tradition of commercial relation to Venetians through the Venetian Fondaco dei Tedeschi and Venetians operating in Nuremberg. The information available on the first Florentine businessman settled in the Southern German town, however, dates back to 1471. Direct and regular commercial relations were to be established in the subsequent decades.See Weissen 2003, 161–176; Guidi Bruscoli 2001, 359–394. Goldthwaite 2009, 198.
[68] Kubinyi 2009a, I. 88 and Kubinyi in the present volume.
[69] Engel 2005, 262.
[70] Arany 2006, 114–117.
[71] Kubinyi 2009b, II. 457–512, here 492–498; Teke 1995a, 135, 139; Teke 1995b, 195.

sources shed light on cooperation among members of these two ethnic groups. The Italians were still very much focusing on the sale of copper and salt and on the lease of the Slovenian export toll (the thirtieth). The latter was extremely important, as it afforded control of the main commercial routes between Italy and the Hungarian kingdom. All the officials operating on this field were *familiares Regis*, that is servants of the king. This position is usually viewed as a characteristically medieval feature of financial administration,[72] but of course it involved a personal relationship to King Sigismund. Out of twelve *familiares Regis* of Florentine origin, six certainly had citizenship of Buda.

According to the Buda Statutes, the retail trade and shopkeeping within the town was reserved for citizens of Buda, and there was a tax payable by holders of such rights. [73] This rule, which was probably in use several decades before the Buda Statute Book was written, caused wealthy foreign merchants, including most Italian and south German inhabitants of the town, to seek urban citizenship from the late fourteenth century onwards. A condition of citizenship was ownership of property, so that many of them had houses, gardens, vineyards or other land within the town walls. For example, at least thirty Florentine businessmen (in 25 families) were Buda citizens in the 1420s.

Buying and selling property may also have been an important business for the German elite of Buda. As these families frequently lacked the necessary capital for long distance trade with wool or cattle, local property may have been served as security for commercial operations. Although the medieval archives of Buda were destroyed, we can find plausible analogies in the *Verbotbücher* of Vienna and some Hungarian towns engaged in the same sort of trade, such as Pressburg, where Buda's German merchant elite had marriage and business alliances. Such transactions were entered into the towns' *Verbotbücher* in order to cover any eventual losses caused to the investors.[74]

The Germans tended to integrate into local urban community. It seems, however, to have been a somewhat peculiar integration, as they were not keen to marry into Buda's patriciate families, either of the old German (Regensburg) stock or the developing Hungarian elite. They preferred family ties with members of the German elite in other Hungarian towns, particularly towns in their business network, such as Bratislava (Pressburg), or with German families in Vienna, Cracow and – most of all – their home town of Nuremberg. In contrast to their marriage policies, the members of the south German elite in Buda were very active politically. They had a strong presence on the town council and almost monopolised the office of town judge between 1403 and 1439.[75] This may appear contradictory, considering the usual interdependence of marriage alliances and urban status. But most of the families belonging to Buda's urban elite existed for no more than two or three generations.[76] Two main factors contributing to this pattern have so far been identified: firstly, the laws of Buda granted equal inheritance rights to both male and female heirs and citizens' widows, and secondly, marrying one of these widows conferred urban citizenship, occasionally resulting in a wide age gap between the spouses.

The south Germans had a continuous presence in Buda and the economic life of the kingdom throughout the century, although there was a perceptible influx of newcomers in the 1470s. Later, south German trading houses such as Welser and Fugger from Augsburg

[72] Kubinyi 1957, 26.
[73] On the conditions of trade in the town see Blazovich and Schmidt 2001, II. 348. (§ 68.), the paragraphs on retail sale Blazovich and Schmidt 2001, II. 354. (§ 77.), 356–357. (§ 80–8.), 358. (§ 84.)
[74] Tózsa-Rigó 2008, 1135–1186. tózsa-Rigó 2009, 95–120; Kubinyi 1963/64, 80–128; Kubinyi 1978, 67–88.
[75] Kubinyi 2009b, II. 457–512, here 490.
[76] Kubinyi 2009c, II. 513–570. especially 517–520; Szende 2009, 206–207.

installed permanent factors in Buda.[77] These firms were sufficiently well capitalised to at last present real competition with the Italians. They first ousted the Italians from tithe collection in the Habsburg territories,[78] and then from the tenancy of mining chambers in Hungary. In 1494, by collaborating with entrepreneur János Thurzó, a burgher of Cracow, they obtained monopoly on the exploitation and sale of copper.[79] The Germans of Buda also supplied the royal court on some occasions, although to judge from the average value of consignments recorded in the court accounts, they still had a lower volume of business than the Italians.[80] They continued to dominate the sale of cheaper cloth, however, both to office-bearers of the royal court and the townspeople of Buda. These activities came to an end with the Ottoman occupation of Buda 1529. Most of them were killed, and the remainder fled, causing an irreversible alteration in the town's economic and social structure .[81]

By contrast, neither the wealthy Italian merchants nor their factors and agents, despite living and working in Buda for several decades, tended to marry into local urban community. Most of them had families in their homeland, and did not intend to settle permanently in Buda.[82] Neither did they directly participate in Buda's urban government, but tried instead to secure good relations with the leading local German and, later, Hungarian merchants.[83] In cases where they did make marriage alliances with local families, they usually chose spouses from the nobility. This often led to permanent settlement in Hungary and was most common among businessmen interested in taking leases on royal monopolies. Recently, the role of family and kinship in Florentine merchants' Hungarian business has been the subject of the same kind of detailed research as has been carried out for the German merchants. The records reveal some cases of a complex strategy, such as that of the Melanesi brothers Simone, Tommaso and Giovanni: Tommaso married into a noble kin group and Simone into a Buda family.[84] Their strategy also tells us about the utility of Buda citizenship, which the records show only Simone to have acquired, Tommaso defining himself as noble.[85] What they did have in common (together with Giovanni, their third brother) was nomination as *familiares Regis* by King Sigismund.[86] This is clear evidence, corroborated by the number of court-linked clients listed in their tax accounts, of the importance of admission to the King's service and of Buda as royal residence and administrative centre. Buda's status as a wealthy town in its own right was of secondary importance.

The nature and intensity of the Florentines' presence in Buda changed in certain respects during the fifteenth century, partly owing to shifts in international commercial trends, the increasing presence of south German capital in the region, and the general security of business ventures in the kingdom. Any interpretation of the presence and activity of the various ethnic groups living in Buda and the opportunities open to them must take into account the town's development as a royal residence and trading centre, changes in the urban legal environment caused by the grant and withdrawal of staple rights, and the growth of the ethnic Hungarian community, which specialised mainly in the international cattle trade and

[77] Buda burghers were representing Nuremberg firms, like Marcus of Nuremberg for the Flextorfer-Kegler-Kromer-Zenner firm as early as the end of fourteenth century, but did not focus their investments on the area. Blanchard 2007, 392.
[78] Goldthwaite 2009, 198.
[79] Kubinyi 2009d, I. 349; Engel 2005, 324; Stefanik 2004b, 310.
[80] Kubinyi 2009d, I. 338.
[81] Zimányi 1987, 49.
[82] Arany 2009, 133–140.
[83] Kubinyi 1963/64, 94, note 96. On Francesco Bernardi also see Rady 1985, 89.
[84] ASF, Cat. 46. Tomo I. 654r-655v, Lukcsics 1931, Lukcsics 1938, II/ 253.
[85] ASF, Cat. 46. Tomo I. 655^{v}. On Simone and Tommaso also see Arany 2009, 135. Kintzinger 2000, 444.
[86] Kintzinger 2000, 444., on Giovanni see also: Commissioni 1869, II. 552–613. nr. 972; Lukcsics 1931, 880, 956.

secured parity in municipal leadership in 1439.[87] Finally, changes in the European trading and banking system influenced the activity of foreigners in Buda and throughout the kingdom. The changes in the Florentines' Central European activities which started in the 1450s have been described as a shift to "Renaissance" commerce, with a clear emphasis on marketing luxury goods to the royal court, and to the aristocracy, which was increasingly adopting the court's manner of display.[88]

The sources indicate a clear drop in number of new arrivals from Italy between about 1440 and 1480, although Italians who had settled in Buda and elsewhere in Hungary in the previous decades maintained their level of business. Following the restoration of stability under Matthias Corvinus (1458–1490) and especially the arrival in Buda of his new wife Beatrice of Aragon and her Italian entourage in 1470, display of royal grandeur assumed a new scale, and the consumption of luxury goods increased accordingly. To meet the demand, Italian merchants, including several from Venice, reappeared in Buda.[89] Many of the Florentines supplying the Hungarian court in the late fifteenth century came from families which had also been present early in the century – the Attavante, Cavalcanti, Strozzi, Albizzi, Pitti, Rucellai, Giugni and Viviani clans. This may be interpreted as the passing on of previous generations' experience and local knowledge.[90]

By contrast with the Sigismund era, very few of them were interested in leases on royal monopolies, the only exceptions being the management of the Slavonian toll of Zagreb, which was retained for a long time by the Florentine Domenico Giugni.[91] As in the reforms of 1458, the administration of royal monopolies was put in the care of the royal treasurer, and direct relations to the king diminished. Consequently, King Matthias had many fewer Italian *familiares Regis* than Sigismund. The need for foreign merchandise, however, prompted the King to grant Italian merchants the privilege to sell their luxury goods freely in the free royal town and royal seat of Buda, without having to procure urban citizenship. Besides the trade in luxury wares, Italians resumed their lending activity, mainly to members of the court. Their advantages over most south Germans in Buda included the use of sophisticated banking techniques and access to capital resources through an international business network, which reduced their exposure to commercial risk. These factors combined to raise the Italian merchants' general social standing among Buda's burgher community, even though they remained outsiders.

For their security, particularly in times of conflict with local community of the kind which occurred in 1496, they sought support from the Hungarian urban elite and their clients among the Hungarian lay and ecclesiastical aristocracy.[92] This is clearly demonstrated in an account book of Antonio di Pietro Bini which survives in the State Archives of Florence.[93] From the diaries of Marino Sanuto, we also know that there were conflicts between Hungarians and Venetians, and Florentines and Venetians.[94] In the years prior to the defeat of

[87] Kubinyi 2009b, II. 490.
[88] Kellenbenz 1985, 333–357.
[89] Balogh 1966; Kubinyi 2009d, I. 342–343;
[90] Arany 2007, MOL DL 37684. (On-line: Rácz 2010.) Nov. 23, 1493;
[91] ASF, Signori, Dieci di Balia, Otto di Pratica – legazioni e commissarie, missive responsive filza 77. c.129., 7. ottobre 1481. In 1495, another Italian, the Zagreb resident Giovanni Pastor was appointed to the office of the Slavonian tricesimator. Beside these information we only know of one member of the Pitti family managing the Pozsony (present-day Bratislava, Slovakia) minting chamber in cooperation with a Nuremberg burgher Jakob Fleischer. See MOL DF 241269. Nov. 11. 1524. In the record written by István Werbőczi, Pitti is mentioned as *mercator germanicus*. The same Niccolo Pitti has a tomb in St. Stephen's cathedral in Vienna, where he must have moved, perhaps due to the Turkish rule (died in 1558) see Kassal-Mikula 1997, 50.
[92] Kubinyi 2009d, I. 343; Kubinyi 1963/64, 94.
[93] On Bini's partner, Ragione Buontempi see Teke 2007, 967–990. and Kubinyi 2009a, I. 100. Dini 1995a, 643; Dini 1995b, 285.
[94] Sanuto 1879–1903, vol. 42. 417–418.

Mohács, Italians such as Niccoló Pitti were already leaving the kingdom, and some of those remaining in Buda until its Ottoman occupation faced bankruptcy, as befell once-wealthy Florentine Felice di Stagio in 1525.[95]

Conclusions

Italian businessmen and firms, mainly from Florence and Venice, were active in the Hungarian Kingdom throughout the Middle Ages. Venetian merchants were dominant in the region in the early medieval period, while Florentines established an intensive presence in the first and the last decades of the fifteenth century. Their main fields of interest were trade in luxury goods, banking, and the lease of royal revenues.

There were some occasional conflicts among Italians and south Germans in Buda as they pursued lucrative business opportunities, but in general they seemed to have been content to divide the market between them and even – in areas requiring substantial capital and an extensive business network – to cooperate. Their activity definitely seems to have been of a complementary nature. The Italians faced more serious problems in times of conflicts involving Hungarian rulers, especially during the reign of Sigismund at the beginning of the century, and again in the 1490s, when their activity and privileges seriously hurt the commercial interests of the other leading ethnic groups in Buda.

While the south Germans in Buda tended to integrate into the urban elite, the Italians, even those who settled for long periods, remained separate. Cases of real integration were mainly confined to businessmen interested in the lease of royal monopolies, and they tended to find their way into the local nobility rather than the civic elite of Buda or the centres of mining and minting administration. Clearly it was Buda, gradually becoming established as the permanent seat of the royal court and central administration, which offered the most attractive business opportunities for foreign businessmen. At the end of the fifteenth century, the Italians working in Buda suffered a narrowing of their sphere of interests, again setting them apart from the south Germans, although there was still a substantial Italian community in the town at the turn of the century, and some of them remained until it was occupied by the Ottomans.[96]

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Animal exploitation in Medieval Hungary

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Introduction

Historical research into medieval animal husbandry and the use of its products began with the analysis of documentary (and to some extent iconographic) sources. However, as was mentioned in the general introduction, help by archaeologists was soon enlisted. Eventually, the study of animal bone finds also began, although this type of inquiry was better developed in prehistoric archaeology in the absence of written sources. In contrast to written sources, however, archaeological finds directly represent material culture and, in the case of animal remains, consumption rather than production. The study of animal bone assemblages therefore opened an entirely new dimension in the reconstruction of medieval economy, complementary to the historical record.

Archaeozoology is devoted to the identification, analysis and interpretation of animal remains from archaeological sites. It is especially challenging to investigate whether medieval documentary sources match the evidence of archaeological animal bone assemblages. Although the detailed analysis of written sources and animal iconography fall outside the task of archaeozoology, familiarity with these is indispensable in properly interpreting the archaeological traces of medieval animal exploitation.

Animal exploitation in the Period of the Árpád Dynasty (1000–1301), is dominated by issues of mobile pastoralists adapting to sedentism in an emerging feudal system. Late medieval research tends to concern the formation as well as the import of new animal breeds and even exotic species, not last under Turkish influence.

Much debate has been focussed on animal husbandry of the 10th century Conquest Period both in professional and lay circles. The first archaeozoological monograph in Hungary was written by Ferenc Kubinyi in 1859 titled “On Camels and Horses from a Zoological and Paleontological Point of View, with a Discussion of their Historical Role in the Migration of Hungarians from the East”. Although the piece of camel bone Kubinyi identified later turned out to be a Pleistocene specimen, Kubinyi's train of thought was most up-to-date in his time. The first burials of mounted Hungarian warriors were discovered already in 1834 at Benepuszta near Kecskemét, then, however, animal remains were not given much attention. Nonetheless, at the turn of the 19th and 20th centuries, József Besskó published a craniological study of the horses of the conquering Hungarians. Another significant contribution was Gyula Brummel's set of articles on the domesticates of the Hungarian Conquest Period.

The biologist Béla Hankó (1886–1959), founder of systematic archaeozoological research in Hungary, represented a historicizing view inspired by a respect for

tradition. His "archaeozoological" research, however, was rather the study of cranial measurements taken on modern domesticates *assumed* to have been of ancient Hungarian origins. Sándor Bökönyi (1926–1994) started analyzing archaeological bone assemblages stored in the Natural History Museum in 1951. He conducted a thorough identification of the faunal remains along with their quantitative and morphological evaluation. His works paved the way to a modern research of animal remains as he supplemented the previous, obscure theories on the origins of medieval domesticates with meticulously collected, objective osteometric data.

During the 19th century construction of national identities, equestrian tradition represented by Scythians has often been confused with Hungarian ethnogenesis. Another important question was whether conquering Hungarians (who led a mobile pastoralist life) could have brought swine with them from the Eurasian steppes to the Carpathian Basin. The debate was partly ideological in nature, as the historical viewpoint predominant in the newly (1867) founded Austro-Hungarian Monarchy preferred the illusion of valiant mounted warriors, contradicted by the image of swine herding. At the same time, it was hard to believe that a people of highly developed animal husbandry were not familiar with swine keeping. At the settlements of mobile pastoralists (Sarmatians, Avars, Hungarians, Cumans) at least sporadic remains of swine regularly occur. This tendency is generally considered to reflect the process of increasing sedentism; however, it is hard to avoid the pitfall of circular reasoning if the question of nomadism and sedentarization is viewed only through the presence or absence of swine.

One of the most important late medieval export goods of Hungary was livestock, predominantly cattle, driven on foot to urban markets in the west. This practice of extensive animal husbandry that ensured the meat supply for cities and towns is well-known from later written sources. It is tempting to see analogies between nomadic and Early Modern Age extensive pastoralism, irrespective of ownership; these, however, are due to the general practicalities of animal herding. Nomadic families usually moved along with their herds; in a newly emerging economic system, however, Early Modern Age drovers were hired as wage-workers for driving cattle to the market or slaughterhouse.

Animal exploitation at medieval settlements

Just as with other archaeological finds, there is a steady loss of information in historical sources, making their interpretation increasingly difficult with time. It is, nevertheless, clear, that this loss of information is not simply time-related but also depends on the intensity of a complex taphonomic process. Animal representations in codices, panel paintings or stone reliefs have different chances to survive, while it is also questionable whether animals were depicted with the same frequency by medieval artists in various media. The three groups of sources – that is, the written, the iconographic and the biological i. e. archaeozoological – are affected differently by taphonomic processes:

- their original content was selected for different purposes,
- their chance to survive and the pace of their destruction differ,
- their frequency varies in time and space, in accordance with their original purpose,

- thus the methodologies suitable for their scholarly analysis are difficult to harmonize.

Consequently, only complementary studies of various types of sources can provide a proper academic understanding of many aspects (animal breeding and exploitation, consumption customs, trade, craftmanship and beliefs) of medieval culture. One faces a similar difficulty when trying to compare animal bone assemblages brought to light at different archaeological sites. There is a visible discrepancy in the number of excavated, analyzed and published sites grouped by settlement type and dating (Figure 1).

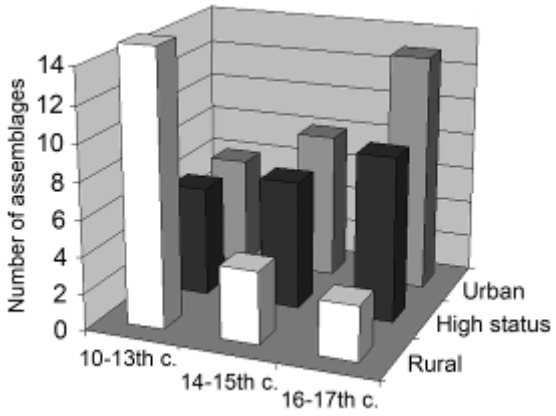

Figure 1: The number of medieval animal bone assemblages studied by settlement type and chronological groups.

Columns of this diagram suggest a diachronic decrease in the number of known rural assemblages, while bone materials from towns and high status centres (meaning royal, ecclesiastic and military settlements) are dated mostly to later periods. These discrepancies may undermine the credibility of a comparative analysis of settlement types and broad time periods. However, according to a Chi^2 test, medieval archaeozoological assemblages showed no statistically significant difference in the typo-chronological distribution of sites. The overall picture has been influenced by historical realities. These included the disintegration of the Árpád Period village network after the 1241–1242 Mongol Tartar invasion and centuries later the increasing pace of urbanization.

An important geographical limitation must also be noted here: following World War I the territory of modern-day Hungary became limited to the central, lowland section of the Carpathian Basin. Important, highly developed regions of medieval Hungary, undisturbed by Ottoman occupation (including specific sites such as mining towns and forts in the Carpathians), fell beyond the newly drafted political borders largely into Romania and Slovakia. While the archaeological study of the Middle Ages seems to be similarly developed in all neighbouring countries, analyses of animal bones seem to have been carried out most consistently in Hungary.

Coincidentally, the central third of the medieval kingdom of Hungary was also the open, strategically vulnerable area affected by the 16–17th century Ottoman Turkish invasion. The Ottoman Empire covered the southern half of what Hungary is today

offering a special opportunity to study the culturally diverse end of the Middle Ages in this area.

The availability of assemblages has also been determined by archaeological strategies in the second half of the 20th century (rescue archaeology vs. research excavations) and the varying attention individual archaeologist paid to the collection of faunal materials of the given site and wether he/she had contact with an archaeozoologist.

Archaeozoological studies on early medieval settlements were conducted by Sándor Bökönyi and János Matolcsi in the 1960s and 1970s, and later their pupils, László Bartosiewicz, István Vörös and István Takács continued the research of the topic. Today a number of young archaeozoologists are involved in the analysis of medieval sites as well.

Rural settlements

The first group of medieval settlements discussed here is best known from the relatively early Period of the Árpád Dynasty. Medieval village research in Hungary began in the 1920s–1930s and became fully established after World War II. There are fundamental chronological as well as geographical differences between these sites and assemblage sizes also vary broadly (Table 1).

Please insert full page Table 1 nearby

Most rural assemblages are dated to the Árpád Period. The smaller the number of finds is, the greater the risk of random bias, therefore this research focussed on assemblages where the number of identifiable animal bones exceeded 400. A rare exception is Budapest–Kána, a fully excavated (16 hectares) Árpád Period village where 15,000 fragments were identified so far. The proportions between the most important meat producing animals, cattle, sheep/goat (caprines), pig and horse are summarized in Figure 2.

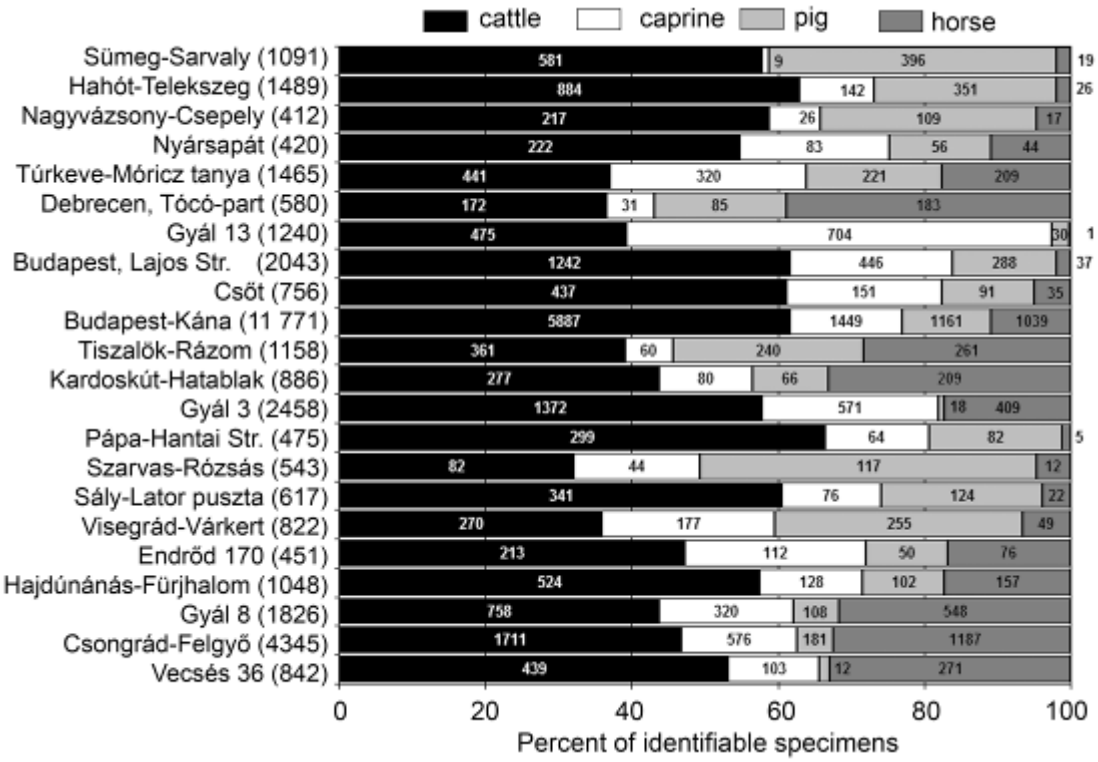

Figure 2: Proportions between the remains of the most important meat producing animals at rural settlements. The diachronic sequence begins at the bottom of the graph. For details see Table 1.

Cattle bones represent a considerable but varying part of rural assemblages.The ratio of caprines (sheep and goat) to swine changes through time. Swine is usually present at Árpád Period rural settlements but caprines are more typical for this early era. At nine of the Árpád Period sites caprines outnumber swine. At Gyál 13 58% of the identified fragments belong to sheep or goat.

By the Late Middle Ages this ratio changed and swine keeping gained more emphasis. This might be related to the settling of Western, predominantly German speaking people to the Hungarian Kingdom many of whom (e.g. Saxons in Transylvania, /Germans in Pest) had already settled before (12^{th}–13^{th} century) brought their own food customs. At the same time, sedentarization accelerated. The ratio of caprines to swine is around 65%–35% in the Early Middle Ages, while in the Late Middle Ages it is 44%–56%. It must be kept in mind that the husbandry of these species is highly environment-dependent (relief, hydrogeography), and swine requires a higher amount of water than sheep and goat.

Sheep and goat are different species, their bones, however, are hardly distinguishable (with the exception of skulls, horn cores and metapodia). Even though goat is more tenacious and gives a higher amount of milk compared to its body size, sheep is found in much greater quantities. There is usually 3–4 times more sheep than goat in the assemblages. Nevertheless, in some cases there are 7–8 times more of them.

Horse was included in Figure 2, because in early rural assemblages it often constitutes a considerable part of the faunal material. Even though Pope Gregory III raised

objections against the eating of horse meat during the mid-8th century conversion of Germanic tribes, Hungarians seem to have kept this custom well after having adopted Christianity around 1000. Following the Hungarian Conquest a number of peoples of Eastern origins such as Cumans arrived to the Carpathian Basin and horse consumption formed part of their tradition as well. The custom survived for a longer time in the Great Hungarian Plain (eastern Hungary, e. g. Debrecen–Tócó-part, Tiszalök–Rázom, Kardoskút–Hatablak) where influx by mobile pastoralists remained stronger. At these sites the presence of horse bones seems complementary to those of cattle. In addition to signs of butchery for food, fine cutmarks on the bones of the feet often testify to the use of the hide. Horse metapodia were frequently manufactured due to their strength and straight shape. Bone "skates" or runners occur commonly. Horse skulls deposited at rural settlements seem to have served apotropaic purposes.

Dog meat was not consumed and, therefore, remains of this animal had a smaller chance to end up in the archaeological material mainly consisting of kitchen refuse. On the other hand, dog carcasses are more likely to be discovered intact and in anatomical order. In the Late Middle Ages dog breeding was practiced by aristocracy and at the royal court, resulting in a number of "breeds" of different character, this is, however, not typical for small rural settlements. Dog skeletons recovered from villages sometimes belong to large, muscular individuals, presumably herding dogs, but most of them testify to middle-sized, pariah dog-like animals. The attitude towards dogs was ambiguous: they were symbols both for loyalty and envy.

Dog remains are mostly brought to light from pits, trenches or wells, but in some cases they were deposited in special contexts. Dog skulls were identified in ceramic pots at the site of Fancsika in eastern Hungary, and the skeletons of several puppies were found buried under upside-down pots across the Árpád Period village of Kána. Dog remains buried in the hearth or the house as well as dogs cut into pieces and thrown into the Árpád Period grave of a woman quartered and buried outside a consecrated cemetery (Visegrád–Várkert) are also known. These archaeological phenomena are of special interest as such customs are hardly ever mentioned in the generally scattered written records. Thay illustrate the survival of archaic beliefs and their coexistence with Christianity during its first centuries in Hungary.

Bones of cats are only rarely discovered, although the number of rodents must have been high at rural settlements. Hen was the main domestic fowl in all cases. Domestic goose is found only sporadically, while duck remains were unearthed only at one 15–16th century rural site. Identifying domestic geese poses a challenge as their bones do not anatomically differ from those of their wild ancestor, greylag goose, and usually it is only their sizes that make them recognizable. Nevertheless, sources describing the selection of geese by colour in 13th century Hungary speak for the importance of this species. Differentiating between the bones of domestic ducks and mallards is similarly problematic. Percentages of game are low, in most cases not exceeding 2% of all mammalian remains. Red deer, roe deer, wild boar and hare are the most common species. Deer are often represented only by antlers, which could be simply collected in the forest without slaughtering the animal itself. Recent individuals of some species, especially fox, badger and hamster may have ended up in the archaeological bone assemblage by dying in their burrows. In such cases the only evidence supporting medieval dating are the signs of human alteration, such as skinning marks.

High status settlements

This group of assemblages originates from high status sites of distinctly non-agrarian character where possibilities for animal keeping were obviously limited. Meat supply to residences of the aristocracy, ecclesiastic or military complexes (similarly to that of free royal cities and mining towns) depended on food production by villages and market towns (to be discussed later). Beef played a crucial role in the everyday diet of the population of Hungary. In addition to high status centres, the inhabitants of the free royal towns and mining towns as well as the military of ca. 50,000 heads provided a constant demand, even at late medieval times when the main goal of cattle rearing was export. Animal keeping within high status settlements was hindered by the lack of space: inside the walls there was simply no room for pasturage and water supplies were often limited. Only animals suitable to be confined to small places (swine, hen), non-meat purpose horses and dogs and cats, could be kept in large numbers in such complexes.

The meat supply of these settlements had to be organized in a way that the animals for slaughter often would be driven to the complex only at the time when they were to be culled and butchered. Only four of the high status animal bone assemblages discussed here are dated to the Period of the Árpád Dynasty (1000–1301). This is just the opposite of the chronological distribution of excavated and analyzed rural settlements in this period among which this period dominated.

On the other hand, administrative, ecclesiastic and military centres are more often mentioned in charters due to their central position as well as their later existence when tax rolls and inventories also help reconstructing the roles of animals in provisioning. Osteological evidence from the 22 sites under discussion here is summarized in Table 2.

Please insert full page Table 2 nearby

According to the percentage contribution to identifiable bones, cattle was undoubtedly the most important domesticate at many of the later sites providing not only beef but also dairy products, draught power as well as bone and leather used in craft industries. Sheep and goats could be exploited for meat, milk and wool. Their meat was most important at some Árpád Period and Ottoman Turkish sites. Pork seems to have dominated at sites where less beef was consumed. The multiparous and omnivorous nature of swine made them an ideal backyard animal at settlements with limited spaces. Poultry, especially hen keeping required minimal labour and eggs and feathers were also utilized.

Although game constituted only a small part of the meat diet it was included in Figure 3 instead of horse as hunting seems to have been practiced by the inhabitants of high status sites more often than by common people. Bones of wild boar, red deer, roe deer and hare are usually found at medieval centres. At the Árpád period administrative and military centre of the comes (royal representative) at Szabolcs as well as Esztergom remains of European bison were discovered, although hunting of this large

beast was probably only a privilege of the aristocracy.

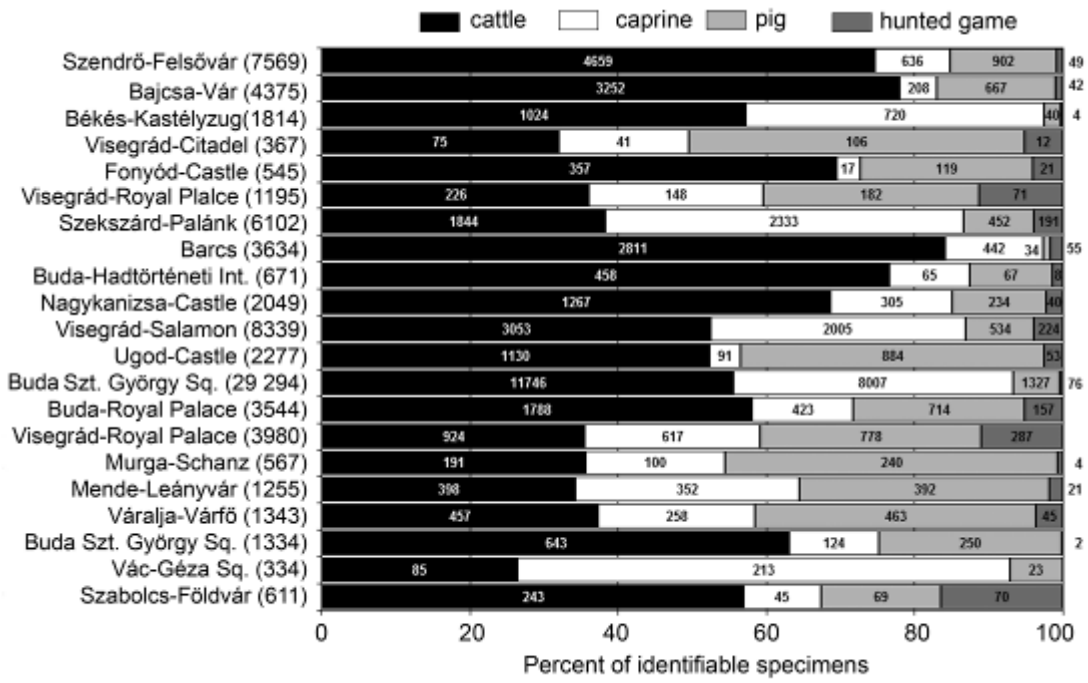

Figure 3: Proportions between the remains of the most important meat producing animals at high status settlements. The diachronic sequence begins at the bottom of the graph. For details see Table 2.

Game gradually lost their dietary significance; however, hunting remained an aristocratic sport, military drill or a form of provisioning during famine. In some cases remains of fur-bearing animals (bear, wolf, lynx), are also found.

In sharp contrast to widely spread *topoi*, the consumption of horse meat was not explicitly prohibited by the Catholic Church in medieval Hungary. It is, nevertheless, unlikely that the few horse bones excavated at high status complexes had been deposited as food refuse. Horse consumption seems to have declined only following the aforementioned mid 13th century appearance of western settlers who introduced a "less nomadic" meat diet into Hungary.

Donkey remains are extremely rare in food refuse. These animals were generally used in the transport of water and light weight products over short distances. Mules and especially hinnies, must have been used as high-status mounts, however, as their bones cannot be clearly distinguished from those of donkey and small horses, it is difficult to appraise their actual significance on the basis of the archaeozoological record.

Dogs and cats lived around the house as self-sufficient, commensal animals mostly scavenging on refuse. Some of them may have been kept as pets, and were used in the protection against vermins, especially rodents. It is actually mostly at such central settlements where the presence of dogs (used as hunting companions or lap dogs) can be linked with high status.

The early example of the domestic water buffalo found at the Buda Castle, the rabbit (not native to the Carpathian Basin) that first occurs in late medieval assemblages in Royal Visegrád, and turkey of American origins, represent rare, exotic animals. By the Early Modern Age such curious animals became fashionable means of self-representation among the elites and included crested hens, bred from individuals with inherited cerebral hernia. The only Holocene leopard find from Hungary, a worked specimen from the medieval Queen's centre at Segesd is unlikely to represent a live import from outside Europe. It looks rather like a decorative item that may have been attached to the animal's skin.

The general characteristics of animal keeping in royal centres and castles are clearly recognizable in most of the assemblages; nevertheless, it is hard to reconstruct the precise proportions between the species. Domesticates prevail in all cases but their ratio varies. Cattle are usually identified as the dominant species but as their bones are the largest, they were cut up during butchering and cooking producing numerous fragments. At the same time, even though there is a general assumption that in the Late Middle Ages the number of sheep and goats gradually decreased as pork became a more important in the diet, no such trend can be observed at medieval centres.

Various explanations are possible for these greatly variable ratios shown in Figure 3. The natural environment of any site is of utmost importance: forested, scarcely habited areas surrounding some of the castles were ideal for hunting; dry, arid slopes are suitable for caprines, while swampy areas are favourable for pig keeping. Customs of consumption among the medieval population also varied: sometimes assemblages of entirely different composition come to light from high status sites located close to each other. There were tremendous differences between the material excavated at the Royal Castle and at Szent György Square, both located within the Buda Castle district. While in royal assemblages bones of large game were discovered in relatively great numbers, swine exceeded sheep and goat, and there were hardly any poultry remains, at Szent György Square.

Urban settlements

Urbanization was a protracted and slow process in medieval Hungary, but animal exploitation differed between rural, so-called market towns (*oppida*) and "proper" towns such as free royal cities and mining towns. Even though the Hungarian name of market towns (*mezőváros*="meadow town", actually meaning non-fortified town) has little to do with agriculture, animal products maintained a crucial role in the economic life of these settlements. Animal production in the extensive outskirts of market towns provided the basis for medieval animal husbandy in Hungary after the deterioration of the Árpád Period network of villages. It is doubtful, however, whether it is possible to speak about animal keeping within market towns in general terms, since this settlement category was far from homogenous, its definition is debated, and although market towns in the Great Hungarian Plain were mainly involved in extensive animal keeping, other *oppida* were specialized in large scale grain or wine production.

The prosperity of market towns was often closely connected to animal production and the aquisition of newly accessible land due to the desertion of the early medieval rural

settlement network. The environment of the Great Hungarian Plain in the east was especially suitable for the keeping of large stock and caprines. From the 14th century onwards, acquired lands were often handled as a common property by towns instead of dividing them into individual plots. At the beginning of the 15th century, a number of large market towns (e. g. Debrecen, Kecskemét, Nagykőrös, Hódmezővásárhely) already had extensive pastures. At the same time, a higher social stratum developed in market towns specialized in animal production and trade. This may explain the massive dominace of beef in the diet of late medieval towns, of which Vác lay on an important cattle trading route.

Please insert full page Table 3 nearby

Three main routes existed for driving cattle to markets abroad: the most important led to Austria and Southern Germany, but cattle traders drove a large number of animals to Italy and Moravia as well. At the beginning of the 16th century, 16,000 cattle were driven to Vienna, 18,000 to Southern Germany and 14,000 to Venetia, which means ca. 50,000 animals annually. This number increased to 60,000 to the 1520s. Debrecen, Kecskemét, Jászberény, Makó, Cegléd, Heves, Szeged, Mezőtúr, Békéscsaba, Hódmezővásárhely, Szentes, Kiskunhalas, Jászapáti, Abony, Káta, Simánd, Túrkeve, Nagykőrös, Békés and Kunhegyes were named by Sándor Takáts and László Makkai as the most important medieval market towns with an interest in cattle trade. Earlier data exist concerning cattle export to Austria, even though market towns joined this activity in large numbers only in the 15th century; this was the time when the animal itself became a more important export good than its other products (wool and leather). There was a big boom in the cattle trade between 1550–1620. Vera Zimányi called this period the "Golden Age of Cattle". Outside settlements cattle owners kept livestock extensively, all year round. It was only in the 16th century that wealthier owners started to provide additional fodder: hay.

Cattle merchants in market towns bought up the livestock and had the animals driven to the markets where they were sold. This was an expensive enterprise: the animals were driven by payed workers (usually one drover was counted for 30 animals, so in case of a large herds wage costs were high). The broad driving roads (*viae bovariae*) and their infrastructure (pastures and watering places along them) also had to be maintained.

Consequently, many market towns became practically centres, even though only in an economic rather than a legal or administrative sense. Market towns started getting involved in the large scale trade in livestock and animal products in the second half of the 15th century, with cattle and sheep being the most important species. This trend was maintained or even promoted by occupying Ottoman Turkish authorities, although the opinion that the Turkish invasion precluded peaceful sedentary agriculture for 150 years should be considered a *topos*.

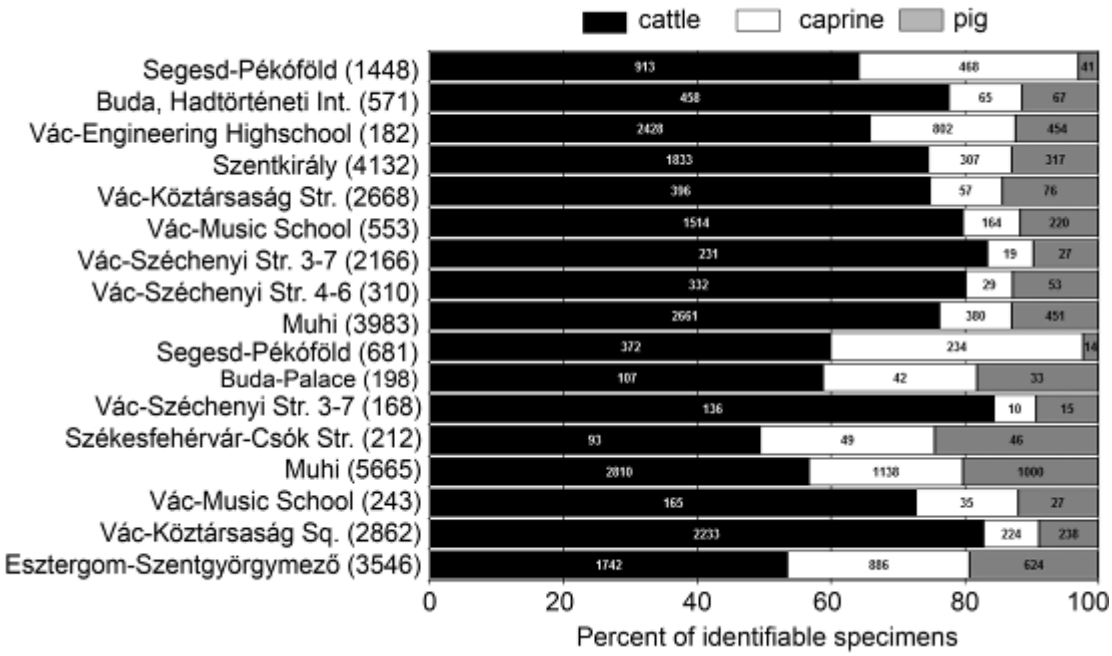

Figure 4: Proportions between the remains of the most important meat producing animals at urban settlements. The diachronic sequence begins at the bottom of the graph. For details see Table 3.

Written sources, including toll and tithe records, travel literature and Turkish defters during Ottoman occupation provide information on extensive cattle keeping and livestock trade, but usually remain silent on the everyday practice of these activities as well as on animals kept for local consumption and work. Animal bone assemblages, however, reflect consumption and not production, representing kitchen refuse; their composition is affected also by the ethnic and religious identity of the given populations. A more precise picture can be gained by juxtaposing different types of sources; most of the archaeological evidence, however, is yet to be analyzed. So far, only the bone assemblage of one market town, Muhi has been analyzed extensively. Animal production for commercial purposes and local animal exploitation constitute different categories, and it is a question how much the husbandry of animals for immediate consumption and agricultural work differed from animal keeping practices at rural settlements.

The ratio of cattle bones in 11th–17th century animal bone assemblages varies between 50 and 82%, with a mean of 70%. This high ratio is partly due to the intensive cattle trade in the Late Middle Ages and the possibility that beef is more suitable for market-redistribution in major population centres than on a household-level subsistence basis.

The consumption of caprines was less characteristic of towns than of earlier, Árpád Period villages; they usually consitute 18–19% of the faunal material in towns. In areas where there are contemporary records on wool production, the ratio of sheep is usually higher in the kitchen refuse. Farms specialized in sheep husbandry started emerging in the 16th century. Groups of Wallachian shepherds appeared with their flocks in deserted areas of the Great Hungarian Plain already in the 15th century. Tithe records from the 16th century show a concentration of the livestock that seems indicative of specialization in sheep. The presence of the expanding Ottoman Empire

must have been a factor as Turks consumed the most mutton in South-Eastern Europe, and they regularly bought sheep on Hungarian soil in the form of military supply. Sheep trading, however, was not comparable to the export of cattle; the number of sheep sold annually in Vienna in the middle of the 16th century was between 10,000–20,000, a figure dwarfed by cattle trade. The forms of both sheep and cattle became varied, with at least half a dozen types developing until the Early Modern Period, many of them recognizable by horn conformation in archaeological deposits (Figure 5).

Figure 5: Depiction of straight-horned Racka sheep by Luigi Fernando Marsigli from 1726. The first horn core finds of this curious form began appearing during the Late Middle Ages in Hungary

Swine was typically kept for local, household consumption. Although there are legal references to swine being kept in large towns in German areas, the Hungarian faunal material suggests that in towns mostly relying on craftmanship the number of swines kept was probably small. Pig herding in market towns was non-commercial, serving local demands for pork and did not differ much from rural swine keeping. During the summer pigs could be grazed, while acorn provided fodder in the wintertime; therefore, swine husbandry was successful near oak and beach forests. Extensively kept domestic pigs probably interbred with wild boars. In the archaeological assemblage of towns, swine bone constitutes a small part of only around 10%, while in the faunal materials of villages their ratio sometimes reached 50%, indicative of direct, domestic meat supplies.

The Buda Castle was built to become the royal centre after the mid 13th century. A well (No. 8), excavated at Szent György Square and dated to the period of King Sigismund (1387–1437), provided evidence of religious dietary restrictions. Artefacts found in the lower layers were indicative of a Jewish community, and indeed the site was located in the first medieval Jewish district. Historical data were also supported by the animal bone assemblage. In the upper layers, accumulated by a later, Christian population, pig bones were present, but they suddenly disappeared in the lower layers

associated with Jewish inhabitants. Their religious prohibitions stricktly forbade the consumption of not only pork but also fish without scales. Remains of catfish and sturgeon were only found in the Christian deposits. Meanwhile the material left behind by the Jewish community contained an unusually high ratio of bones from poultry.

Regular horse meat consumption was unlikely in late medieval urban areas. The use of horses for ploughing was not a general phenomenon either, although horses and oxen were sometimes harnessed together, even if the ox was a more usual plough animal. In some settlements in the Great Hungarian Plain, especially in Borsod County, mostly horses were used for ploughing, even though they were usually considered as animals of estates of the nobility. City dwellers only rarely owned horses in large numbers, and their participation in horse trade is not comparable to that in the trade of cattle.

Last but not least, market towns playing a key role in cattle trade probably contributed to the emergence of conscious breeding as well. The goal was the production of high quality beef, which meant a strong artificial selective pressure. János Matolcsi pointed out that 16th–17th century slaughterhouse documents and archaeological data reflect an increase in the withers height as well as weight of the animals. The stock was, however, heterogenous. Although the picture that emerges from Bavarian or Austrian cattle markets is quite consistent, the original livestock, geographically far from the demand markets, lacked this kind of homogenity. On smaller markets along the driving route, the drivers tried to sell underweight, lame, injured or just less eye-appealing individuals, so that only the best part of the herd would reach the foreign target market. Variability is testified to by records in which the animals were conscribed according to their color or the shape of the horns. The late medieval cattle stock that continuously grew due to the trading boom provided a selection basis for the emergence of the Hungarian grey cattle in the 18th century. The price of beef began falling after 1620, reaching the bottom in the 1650s. The main cause was the decrease in the market demand, a consequence of the impoverishment of the Austrian and German bourgeoisie; there were, however, several more subtle causes for the crisis as well. Contemporary documents do not only testify to a decrease in demand, but also to a growing conflict with Austrian cattle traders, corruption in administrative matters and a decline of public safety. The decreasing demand for Hungarian cattle in the 17th century may also be explained by the appearance of large size dairy cattle bred at the North Sea, a dual-purpose cattle type whose meat could possibly substitute for previous imports from Eastern Europe.

Fowling in medieval Hungary

The exploitation of wild avifauna forms a special aspect of medieval culture. So far, remains of wild birds were brought to light from 37 medieval sites in Hungary. 12 of these sites are dated to the Period of the Árpád Dynasty, 14 to the Late Middle Ages, and 11 to the Early Modern Period. The number of identified species is 55. Eleven rural sites provided remains of wild birds of 21 different species. Most of our data come from royal, church and military centres: 14 sites provided 39 different taxa. Twenty species were recognized in 12 urban assemblages (Figure 6; Tables 4–6).

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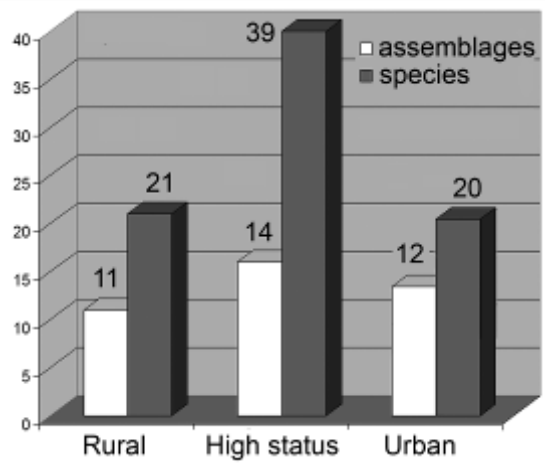

Figure 6: The diversity of bird species by settlement type.

Most of the identified species nest in the Carpathian Basin. Some of them are present in the area all year round, others only from spring to autumn. The common teal and the bean goose migrate and are seasonal here in the spring and the autumn, even though the latter often spends the whole winter in this area (from November to April). Therefore, bird remains known from 14–16th century Segesd reflect seasonal hunting. From the 14–15th century Visegrád Royal Palace the remains of mistle thrush and fieldfare were found. These species appear in the Carpathian Basin only during the winter; consequently they must have been killed in the wintertime. The tawny eagle, the Lanner falcon and the peacock are not native to Hungary and must have been brought here by trade or as a gift. Although peacocks are counted among the domestic fowls due to their conscious taming and husbandry, their use as exotic rarities and indicators of high status suggests a different attitude.

The aquisition of bird meat and eggs was based on poultry keeping from the Early Middle Ages onwards; hunting contributed to the nutrition as an occasional source of meat, which is also supported by the archaeological finds. The most commonly hunted wild bird was partridge, discovered at 13 sites. The meat of great crested grebes, swans, geese and duck taxa, black grouses, hazel hens, quails, pheasants, coots, cranes, great bustards, black-tailed godwits, woodcocks, wood pigeons, hoopoes, starlings, mistle thrushes and fieldfares was also consumed. The coot and the great crested grebe were approved Lent food, just as fish. According to contemporary data on food traditions, recipes and ethnographic observations, jackdaws, rooks and crows were also consumed. The latter is testified to by the cut ulna of a rook, brought to light at Early Modern Age Szendrő–Felsővár.

In Northern Europe the large-sized waterfowl and wading birds were served – usually stuffed with food – as decoration at feasts of the aristicracy. We do not know, however, whether the grey heron, purple heron, great white egret, glossy ibis and swan identified from high status centres ever played a similar role.

The presence of a varied avifauna in medieval assemblages indicates a role exceeding that of animals hunted merely for consumption. Swans, peacocks and cranes were popular pet birds in castle parks. Written sources as well as iconographic representations speak for the value attached to the plumage of grebes, peacocks,

cranes and bustards; it was fashionable to use these as ornaments on clothing and, from the Turkish Period onwards, on horse harness. This custom probably rooted in the signals used by hunters. Men of a lower sosical status decorated their hats with the plumage of domestic birds (goose, duck or rooster), while members of the elite, including women, used the feathers of exotic ostrich, egret or crane (Figure 7).

Figure 7: Hungarian nobility wearing decorative plumage at the turn of the 16–17th century (after Szilágyi 1897).

Plum holders made of precious metals and ornamented with gems were so expoensive that they were used as pawn in times of financial difficulties. Peacock and crane bones recovered from the Árpád Period site of Balatonkeresztúr–Réti-dűlő are of special interest: according to written records as well as archaeological data, the area was under the ownership of a wealthy family who could afford keeping or consuming these birds.

Not only the feathers of birds had a symbolic role, but birds were sometimes used as sacrificial animals. Most of the birds killed as a building offering in the Árpád Period were domestic fowls; their carcass was often covered with a pot. At Csengele–Fecskés, one of the upside-down pots contained the remains of a house sparrow. The two flutes found at 15th–17th century Visegrád–Alsóvár were made of ulnae of a golden eagle; this find also may suggest a symbolic meaning. Falconry of Asian

origin was probably a sport of the aristocracy, even though more common species (goshawk, sparrow hawk) might have been used in hunting by people of a lower status as well. In the well of the Teleki Palace in the Buda Castle (14th century), remains of a Lanner falcon were found, suggesting the presence of expensive, imported animals (Figure 8); the bones of a tawny eagle found at Turkish period Bajcsavár implies a similar context.

Figure 8: Leg bones of an Imported Lanner falcon from 14th century Buda Castle.

The upswing of conscious landscape altering (river regulation, forest clearing, ploughing) and hunting in the Middle Ages adversely affected not only the large mammals, but also the avifauna. Populations of location-bound (e.g. black grouse, little bustard) and overhunted (crane) species were highly damaged. These have almost completely disappeared from the avifauna of Hungary. Cranes are migratory; their seasonal incubation is rare. The white pelican and the mute swan incubated in the Carpathia Basin until the 19th century, now they hardly appear in this area. The number of golden eagles decreased to five-six breeding pairs.

Living conditions of other species, however, were improved by the expanding towns and the ever denser network of settlements that provided food resources and shelter from natural enemies. Ethnographic evidence (folksongs, proverbs, counting-out rhymes etc.) implies that the white stork, the common house martin and the barn swallow were urbanized first. Their mongamous nature, the strong attachment to their mates and nests as well as their small, tidy nests made them into the symbols of fidelity in folklore. They are considered beneficial birds due to their diet.

Some crows (rooks, hooded crows, jackdaws and magpies) and predatory birds have lived close to humans as well, nevertheless, they were not held in esteem at all. Although groups of crows rid the ploughland from pests, the damage they caused in the crops, the noise they make and their tendency to "steal" objects made them vermins in the eyes of humans, and they have been persecuted despite their friendly and easily tameable nature. The most bird remains unearthed at one site (82 bones of 14 individuals, from the site of Csepel–Vízművek, 16th century grain storage pit) belong to jackdow. In addition, magpie, jay and kestrel bone fragments testify to the presence of avian species in the medieval towns of Hungary. Magpies and jays were sometimes tamed and kept as pets, which may have been the case with the 13–14th century jay bones brought to light at Szent György Square and from the Teleki Palace in the Buda Royal Palace.

Medieval fishing and the great sturgeon

Screening is a precondition for the reliable recovery of fish remains from archaeological sites. This technique, however, is almost unknown in the medieval archaeology of Hungary. Therefore written information on medieval fishing, especially in legal documents (discussed separately), still dominates over archaezoological evidence.

The list of species that can be discussed on the basis of bone finds is thus limited to commonly occurring, large bodied catfish (sheathfish), pike, carp and large, anadromous species in the sturgeon family (Acipenseridae). In addition, small cyprinids and pikeperch are sometimes identified in the assemblages. In this subchapter, fishes that played a crucial role due to their size and economic importance, that is, sturgeons and especially the great sturgeon, are discussed. These nearly extinct, large-sized species of the Danube are anadromous, i. e. they regularly left the Black Sea and came to the upper part of the river to spawn. Their migration usually took place between January and June as well as between October and December.

Fish remains identified to species are known from 23 sites in modern-day Hungary. Six of them are villages (of which four are dated to the Period of the Árpád Dynasty, while two to the Late Middle Ages). All these villages are located close to the Danube or the Tisza River. The general proportions between pooled fish bones identified to species are shown in Figure 9.

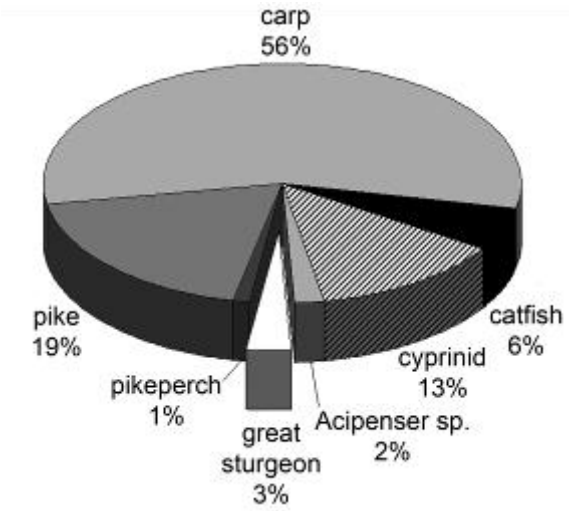

Figure 9: The taxonomic distribution of 1029 fish bones from 23 medieval sites in Hungary

Even though this summary might obscure small differences between the sites, it shows the dominance of carp (Cyprinidae) and the low ratio of sturgeons in the medieval diet, also reflected in the written sources. In 1495, when the king was welcomed as a guest at the bishop's palace in Eger, 6,000 carps, sterlets, burbots, catfish and trouts were served, from the bishop's fishponds. The only species missing from this list but often found in archaeological assemblages is pike, a species predating on small fish thus causing damage to stocks raised in fishponds.

Remains of sturgeons were only found in a single rural context at the site of Győr–Ece. In 1432, when serfs of the Eger chapter caught two great sturgeons at the chapter's estate in Palkonya and tried to transport them to Eger, a local official confiscated the fish by force. Only one of the two known fish assemblages from towns, Turkish period Vác–Zeneiskola (Music School) contained bones of a great sturgeon. The remaining ten sites were all administrative and/or military centres; bones of Acipenserid fish, usually great sturgeon, were found at nine (!) of them. Excavations at the Dominican friary in Buda Castle, the nunnery of the Poor Clares in Old Buda, as well as the Cistercian Abbey in Pilisszentkereszt also brought to light bones of great sturgeons (Table 1).

Sturgeons are 1–6 m long and have a lifespan up to 25 years. The bones of their species are not always distinguishable, a fact exacerbated by spontaneous hybridization between several species. The great sturgeon belongs to a distinct genus; sterlets adopted to freshwater and do not migrate to spawn. These animals were obviously valued for their size, as it is reflected in the 1329 tolls of Zsolca by the Sajó river. 2 denarii had to be payed after a great sturgeon, while only 1 denar toll was prescribed for other Acipenserid fish, similarly to horses, oxen or cows.

Great sturgeons sometimes of several hundreds kilograms were cut up into pieces after they were caught; their meat was salted and transported to the market, while the bones were left behind (Figure 10).

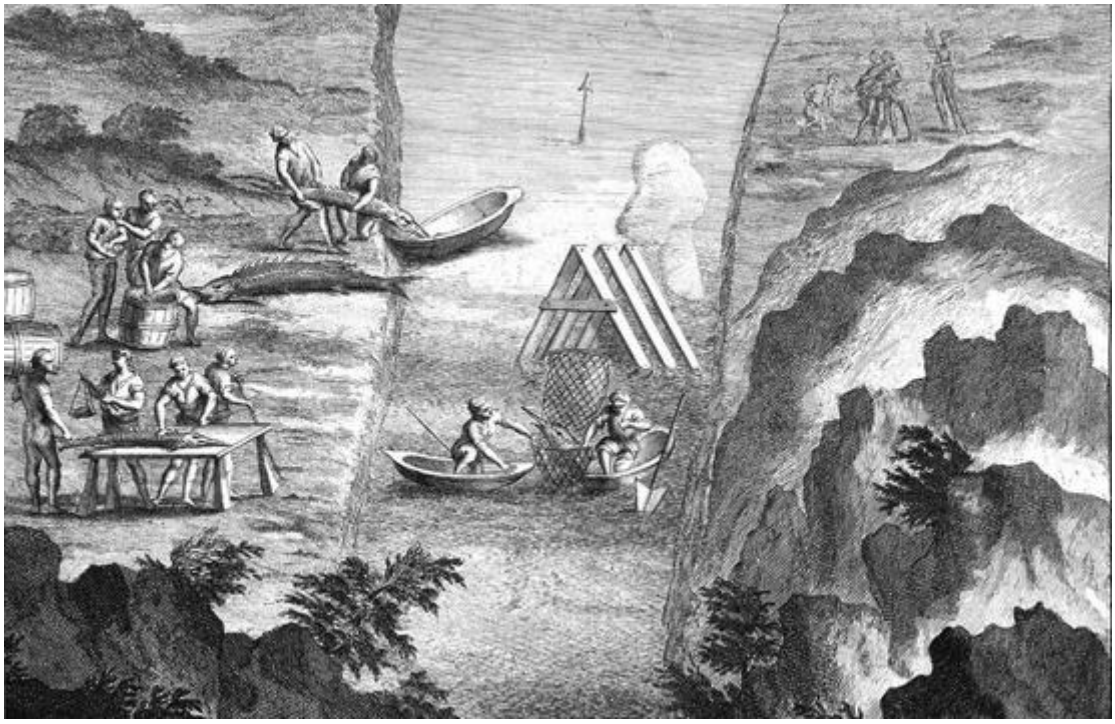

Figure 10: Landing and processing great sturgeon on location in the Iron Gates Gorge of the Danube (after Marsigli 1726).

Matthias Bél (18th century) noted that great sturgeons were tied to a pole after they got caught and fatigued in the river before they were dragged in the Danube to the nearby big markets (Buda, Vienna). King Sigismund's 1405 order protecting fishermen and fish traders, according to which butchers had the right to sell only fish of large size on their chopping blocks and banks, must have applied mainly for great sturgeons. According to the guild documents and letters patent of the medieval butchers of Buda, in 1519 great sturgeons and other Acipenserids were transported to Buda from Paks and Földvár in the south, Esztergom, Nagymaros, Megyer, Óbuda and Szentlászló (across from Óbuda) in the west.

Great sturgeon remains are conspicuously frequent at sites near the Danube between Esztergom and Buda. This, however, does not reflect a special abundance of fish in the Danube Bend Gorge, but rather the geographical location of areas in focus of archaeological research. Only Sárszentlőrinc and Zirc in Transdanubia and the Castle of Szendrő in the Northern Hill Region are far away from these well-researched riparian environments.

Fish trapping was practiced using weirs; a weir was a substantial timber structure sometimes equipped with additional nets. Side branches of rivers and small tributaries also served as natural traps or could be relatively easily fenced as weirs. The town of Komárom, at the confluence of the Vág and Danube rivers, was an area where from 1518 onwards great sturgeons were to be caught by royal authorities only.

Nicolaus Olahus mentioned that the whole breadth of the Danube could be fenced and turned into a weir, which was, however – as a 1528 lawsuit between the towns of Vác and Buda testifies – a rather undesirable method. Therefore, weirs were rather placed at the confluence of tributaries or between the bank and a smaller island. In the 1726

book of Luigi Ferdinando Marsigli, published in Amsterdam, weirs are clearly seen where the Iron Gate gorge meets the Lower Danube (Figure 10). Building weirs must have been a large-scale enterprise; in the 16th century Tisza region peasants of several villages were ordered to make weirs under the leadership of a *magister clausurae*, and the oak timbers had to be transported there from forested areas, often over huge distances. Peasants who participated in the construction were then given some of the fish caught by the weir, except for the valuable great sturgeons.

The caviar of this species must have been an important delicacy. Although there is not much chance to find archaeological evidence for fish eggs, the consumption of caviar by the aristocracy was mentioned in contemporary documents. This interestigly coincides with the appearance of water fowl in archaeological assemblages, species that also contributed to the diet during Lent fasting. The otter and the beaver – the latter having scales on its tail – were also considered fish during Lent. Beaver bones were brought to light in large quantities from the 17th century castle of Bajcsa, where soldiers of mainly German origins served. Such delicacies of the medieval centres signify that rather the letter than the spirit of Lent was observed by the élite striving both for varied food and self-representation.

For observing Jews following the Torah only scaled fish were considered kosher. The bony plates of sturgeons were not seen as scales from a religious point of view as they cannot be removed from the body without injuring the skin. Therefore, Jews in Eastern Europe were allowed to consume neither Acipenserid fish nor their roe. While bones of the great sturgeon and the similarly scaleless catfish were frequent in the assemblage recovered from the medieval castle of Buda, the remains of these species are missing from the kitchen refuse found in the aforementioned well 8 of the Old Jewish Quarters at the Teleki Palace of Buda.

Medieval bone manufacturing

Raw materials of animal origin origins had been regularly used for thousands of years before the Middle Ages in manufacturing tools and ornaments. Worked bone, antler and tusk objects differ from other archaeozoological finds, as they reflect the manufacturing process, the methods and technical level of craftmanship, as well as the symbolic meanings behind certain tools. On the other hand, it is difficult to use these finds for reconstruction of the environment, as they often were made according to human decisions and modifications (choice of raw material, the ever developing methods of the working process, as well as changes in use).

Although in principle, any bone of any species can be used for tool making purposes, the selection of raw material was a conscious process. Radii and metapodia of large ungulates were of special importance. Fragments of these bones of cattle, a species that dominated the medieval diet, could even be selected from the kitchen refuse and reused. Metapodia represent a body part that carries meat of secondary quality. In addition, their ossification completes at a relatively early age, providing thick and compact bone material. Therefore, these bones (procured from butchers) constituted the main basis of raw materials for bone workshops operating in medieval towns.

Bone working in the 12th–13th century was barely specialized. Finds unearthed from layers representing this period (*ad hoc* tools, simple tools presumably manufactured

within the household, pins, „skates" or sledge runners made of horse metapodia, rarely knife handles) testify to manufacturing not exceeding the framework of household production. This is not contradicted by the discovery of the finds of a bone workshop near Orosháza, from the Period of the Árpád Dynasty. It was only in the 14th–15th century that tools of serial production, made from the same type of raw material and by using similar techniques, produced in large numbers occurrred.

Medieval bone manufacturing workshops known from archaeological contexts (Buda, Visegrád, Diósgyőr, Pozsony, Besztercebánya, Kassa, Eperjes, Konstanz etc.) seem to have been specialized in the production of certain tool types. Bone beads were produced in several sizes; these were mostly used for rosaries. Rosaries were of Eastern origins; this religious object was spread in Europe by Dominican monks in the 13th century, and its liturgical uses as well as its superstitious connotations are known. Another typical product of bone processing workshops were dice. The regular cubes with six faces and the methods of their production are known not only from archaeological finds but from contemporaneous representations as well; their presence is also associated with the often mentioned prohibition of their use by both clerical and secular authorities.

In the bone processing workshop of Visegrád, dated to the last third of the 14th and the beginning of the 15th century, both beads and dice were produced. The process of fabrication was reconstructed on the basis of the workshop refuse (drilled bone plates of different sizes, rectangular, prism-shaped, sawed pieces of bone, complete and spoilt dice), the iron drill with three tips that was once part of a lathe used for making beads, as well as contemporary pictoral representations. Drills of various bit sizes were used in the Visegrád workshop, as it is attested by the diameter of the holes on the leftover blanks (Figure 11). In an 18th century workshop producing bone buttons in Budapest–Tabán three- and five-armed drills were both used.

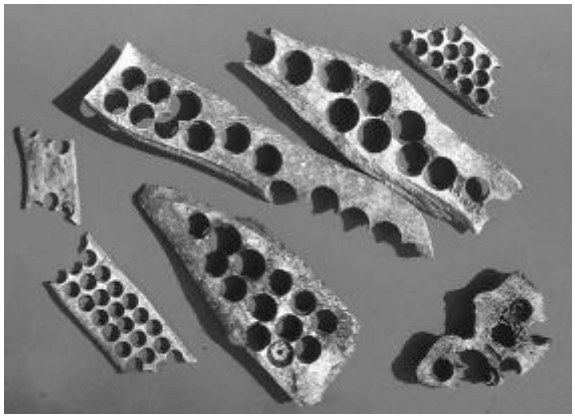

Figure 11: Debitage from the bone manufacturing workshop in 14–15th century Visegrád.

Specialization in medieval bone working was probably related to differentiation in related crafts. Another typical product of the workshops, the simple or ornamented knife handle was attached to the knife itself by a cutler, who later also sold these items. In Steyr in Austria 15th century cutlers hired „carvers" (*Schroter*) to produce bone and wooden plates for a fixed price. Written sources from the beginning of the 19th century indicate the mass production of bone items (handles, buttons, gaming pieces, combs, spindles).

In addition to these, belt studs, strap ends or belt stiffeners, most frequently found as grave goods, were also products of bone processing workshops. Simple bone objects made at individual households („skates" or runners, sleds, needle holders, weights for fish nets, flutes made of bird bones, simple toys), however, are present throughout the entire Middle Ages. Most of these objects are known from ethnographic sources to have been in use until the 20th century.

Horn working is usually evidenced by small, characteristic cutmarks on horn cores of cattle, sheep and goat, made during the removal of the horn sheath from the bone. Buttons, combs and translucent lantern panes were made of horn, these, nevertheless, count among the rare finds, just as the large drinking horns made of aurochs and bison horns as horn is prone to decay. The presence of horn cores without cutmarks in archaeozoological assemblages may indicate other activities such as tanning.

Antlers of red and roe deer do not constitute a part of the kitchen refuse, and their appearance at a site is usually associated with their working. Both shed antler and those of hunted animals were suitable for tool making. Antler was a cheap and easily accessible raw material, especially in forested areas. The systematic collection and processing of shed antlers is also discussed in written sources. Antler is more flexible than bone and is less likely to crack. This made antler an ideal raw material for everyday tools, ornaments or parts of more complex structures, from the Neolithic to the present day. First and foremost antler was used to cover the handles of tools (drills, chisels, larger knives). The consciuos use of antler as a raw material in 14th century Hungary is shown by the practice of making crossbow nuts (cylindrical pawls to retain the string) and covers for the crossbow prop of antler. Such carved antler pieces are frequently found in castles and towns. Decorated gunpowder flasks were also made of antler, although these are found rarely. Examples are known from the castles of Ugod, Hollókő and Ozora.

Medieval bone and antler working did not require special tools. Larger pieces of bone and antler were cut up by a type of metal saw used from the Bronze Age onwards. This phase included the removal of the epiphyses at either end of long bones or cutting up the antler beam into smaller pieces etc. For secondary cuts and shaping of the piece drawing knives were used. Antlers of older stags were probably softened by boiling as is attested to by ethnographic observations.

Pole lathes and drills, mechanized tools frequently seen on medieval pictorial representations, were widely used from the antiquity onwards; their use is indirectly evidenced by the aforementioned archeological finds as well. The varied ornament motifs (geometric, floral, figural etc) were incised using carving knives. A common practice of applying colours is testified to – in addition to sporadic archaeological evidence – by written sources: Teophilus in the first half of the 12th century mentioned red coloured bone objects, while Gionaventura Rosetti wrote in Venice about solutions and admixtures for colouring bones green in 1548.

Ivory – most commonly dentine from the upper incisors of elephants – was imported to European markets in the early Middle Ages mostly from West Africa, through Byzantium. From the 14th century onwards, ivory was transported in huge amounts through French and Flemish harbors to the large processing centres in Western

Europe, especially France, Italy, Rheinland and South-West Germany. This was the time when ivory objects, such as combs, handles, ornaments and small boxes appeared in more considerable numbers in the area of Hungary as well. Most of these artefacts must have been brought to the centres by trade: ivory objects (mainly combs) were found in large numbers in Buda and Visegrád (Figure 12).

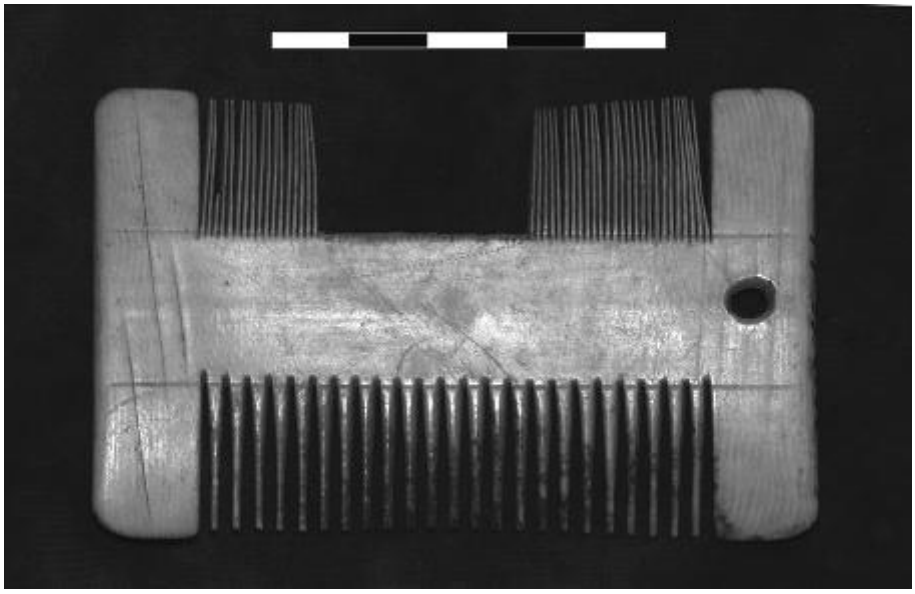

Figure 12: Late medieval elephant ivory comb from the Lower Castle of Visegrád

A well-known example for ivory working in Hungary is the pommel and crossguard of the sword associated with St Stephen, the first Christian King of Hungary. It was probably produced in a 10th century (Viking) workshop, and has been kept in Prague since the 14th century. Its raw material, however, is still to be exactly identified, because the working and trade of walrus tusks in the Middle Ages is associated with Northern Europe (Norway, Denmark, England, and partly Northern Germany), although luxury objects made of this raw material (gaming pieces, clothing ornaments, carved sheets used for decorating boxes) appear even in the Middle East, probably through Russian and Varyag traders. Walrus ivory was a highly appreciated prestige material sultan's court in Istanbul. According to a list of gifts compiled under the reign of Süleyman the Magnificent (1520–1566), mostly belt ornaments, combs, back-scratchers, inkstands and handles for daggers were produced from it. A walrus ivory belt plaque found at the Turkish fortress of Barcs along the Drava River in Hungary may have been imported through Tartar and Ottoman–Turkish mediation. During the excavations of the monastery of Veszprémvölgy, a richly carved, T-shaped end of a crosier made of walrus tusk was also found possibly indicative of a western import.

The teeth and claws of bear and exotic carnivores may have been attached to their furs, as e. g. the sawed-off skull fragment with the canine teeth of a leopard, found in late medieval Segesd, a possible ornament attached to a so-called *kacagány*, a traditional type of short cloak, often made from leopard skin.

In summary, there is evidence for the production and use of bone and antler objects in mass quantities in the Middle Ages. It is important to remember that most bone and

antler objects could be carved out of other material as well: handles, spindles, combs and flutes could easily be made of wood. There are, however, a number of object types that consistently were made of bone and antler. The main reason behind this practice was that bone and antler were accesible everywhere and relatively easy to work but more durable than ordinary wood. Meanwhile luxury items in high status areas were often made from imported raw materials or brought to Hungary as finished products.

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Figure captions

Figure 1: The number of Medieval animal bone assemblages studied by settlement type and chronological groups.

Figure 2: Proportions between the remains of the most important meat producing animals at rural settlements. The diachronic sequence begins at the bottom of the graph. For details see Table 1.

Figure 3: Proportions between the remains of the most important meat producing animals at high status settlements. The diachronic sequence begins at the bottom of the graph. For details see Table 2.

Figure 4: Proportions between the remains of the most important meat producing animals at urban settlements. The diachronic sequence begins at the bottom of the graph. For details see Table 3.

Figure 5: Depiction of straight-horned Racka sheep by Luigi Fernando Marsigli from 1726. The first horn core finds of this curious form began appearing during the Late Middle Ages in Hungary.

Medieval mining

Zoltán Batizi

I. A brief history of mining[97]

Before the foundation of the state of Hungary

There is definite evidence of mining by the Romans on the area of medieval Hungary. In the province of Dacia, the Romans mined gold around Abrud, Roşia Montană and Zlatna in the Transylvanian Ore Mountains. Tacitus, in his account of the Germanic peoples, several times mentioned gold mining by the Quades and Marcomans, related peoples who at that time (around the start of the Christian era) lived in the north west of the Carpathian Basin and parts of the modern Czech Republic and Silesia. It is possible that these mines were in the goldfields of north west medieval Hungary (now West Slovakia). It is highly probable, however, that peoples of the Carpathian Basin had been extracting gold, perhaps not by mining, but by panning and on the surface, or native gold from outcrops, for a long time before that. Archaeologists have also found evidence of iron being made from surface bog ore from the early Iron Age. [98]

It is also from archaeology that we know of the very high level of gold and metal work brought by the conquering Hungarians from the Black Sea region. The Hungarians may have obtained some of the raw material for their jewellery directly from the ground. Since they lived along rivers in Eastern Europe until 895, this would almost certainly have been gathered by panning.

When they arrived in the Carpathian Basin in the late ninth century, the Hungarians found working salt mines in Transylvania. There were also people in the west of Transdanubia who to some extent specialised in making iron. Their number was subsequently augmented by miners taken captive in German areas during the plundering expeditions of the tenth century.

The meagre written sources concerning Hungary between the tenth and twelfth centuries contain no direct references to mining, and anything we know comes from archaeological finds, ethnographic analogies and toponyms in charters dating from between the eleventh and thirteenth centuries. The clearest evidence of iron production comes from excavated bloomeries. The large number of metal objects commonly found at excavations – metal parts of tools used for farming and household purposes, weapons and other personal objects – also suggests that the majority of these were made from domestic iron, smelted from local ore, and were not imported. There is a place called Vasvár (“iron fort”) in both western and northern Hungary, and the many early Árpád-era ironworks reveal the presence of an iron industry, probably under the control of a chieftain, as early as the tenth century. It was common for the inhabitants of a village to specialise in a single trade during the first half of the Árpád era (the tenth and eleventh centuries), causing the village to become known by the name of that trade. Some of the settlements whose names preserve the memory of metalwork trades (and the mixed Slav-Hungarian population of the time) are grouped around the two Vasvárs; the rest are scattered throughout the kingdom. The old Slavic word ruda=ore is the origin of the Ruda in Rudabánya (bánya means mine), where metal ore was mined, and the related toponyms Rednek, Rendek and Rudnok, as well as Vigne and Kovácsi (the

[97] The most important work when studying medieval mining: Wenzel 1880. The more recent summaries of mining in the chapters on the Middle Ages are mostly repeating the Wenzel’s points. E. g. Benke 1996. Further important overview: Zsámboki 1982a, 13–48.

[98] Benke 1996, 30. and Zsámboki 1982a, 14–15. and 24–26.

Hungarianised version of another Slavic word meaning smith) refer to iron ore mining and metallurgy trades. Several other toponyms also appear to belong to this group: the Slavic-origin Rudna, Radna and Kazinc, the Hungarian Vasas (means iron) and Verő (means hammer), and the Turkish-origin Tömörd and Tárkány. Some of the iron produced from the ore in the bloomery must have been processed in the villages called Csitár and Csatár (from a Slavic word meaning shield-maker). The paucity of written sources has caused some historians of the tenth and eleventh centuries to ascribe great significance to toponyms derived from occupations. From their number, type and distribution within the Carpathian Basin, some historians have attempted to deduce how the system and location of servant folk specialising in various trades evolved and operated in the early years of the Hungarian state. Other historians have challenged the reliability of this method, citing among their main arguments the fact – backed up by documentary evidence – that many craftsmen lived in villages whose name was unrelated to their trade. Metallurgy was not confined to places with names like Vasas, Rednek, Kovácsi, etc, but also went on in villages named after some other characteristics, such as their apple trees (Almás) or their size (Nagyfalu).[99]

From the foundation of the state up to the thirteenth century

Stephen I (reigned 997-1038) probably had his coins minted in Kovácsi (meaning a settlement of smiths) near Esztergom, using silver mined near what is now Banská Štiavnica in Slovakia. This follows from later – thirteenth century – written sources which mention the royal coins of that time as being made by "minters" who were inhabitants of this village. The Arab traveller Abu-Hamid al-Garnati wrote of the Hungarians in the mid-thirteenth century that "their mountains contain much gold and silver."[100] The first written reference to silver mining in the Banská Štiavnica area is in a document of 1228, which mentions an "argenti fodina" or silver mine in the description of the boundaries of an estate near the town. The place referred to as "Bana" (bánya=mine) whose revenue provided the 300 silver marks a year that the king paid in compensation to his former cup-bearer (magister pincernarum) starting in 1217 can almost certainly be identified as Banská Štiavnica. The revenue probably derived from mining, although the fact is not stated. This place retained its name – the word for "mine" without any distinguishing prefix – from the beginning of the kingdom until the late thirteenth century, suggesting that it was the first mine to be in operation when the minting of silver coins began, and remained the kingdom's most important mining settlement for nearly three hundred years.[101] The high degree of expertise and experience required for extracting precious metals and for mining in general, even in the Middle Ages, was something possessed by few inhabitants of Hungary. Consequently, kings and landowners were frequently obliged to bring in foreign settlers, mainly from Austrian and German lands. It was probably the boom in silver mining that brought German-speaking miners to what are now called the Slovak Ore Mountains and to the Rodna area of Transylvania.[102]

The author of the Gesta Hungarorum, Anonymus, who lived at the turn of the twelfth and thirteenth centuries, knew of salt mines in Transylvania and gold panned from the rivers, and projected these activities on to his account of the Hungarian Conquest. The River Arieş (in Hungarian, Aranyos, "golden") in the Transylvania Ore Mountains earned its name from

[99] On early metallurgy and on the two metal producing centers: Heckenast et al. 1968. Heckenast and Györffy drew attention to the role of place names in the dispute on the servant folks. See: Heckenast 1970 and Györffy 1972, 261–320. On the counter arguments: Kristó 1976. On the origin of the different toponyms: Kiss 1997.
[100] Bolsakov and Mongajt 1985, 58.
[101] To the charter evidence on Banská Štiavnica see: Györffy 1963–1998, III. 243–247.
[102] Wenzel, 1880, 23–24. and Zsámboki 1982a, 15–16. On Kovácsi next to Esztergom: Györffy 1963–1998, II. 271–273. The perambulation of 1228 in the surroundings of Banská Štiavnica: Györffy 1963–1998, II. 433.

the ore it carries in its waters. Panning for gold was also mentioned in two ore-rich areas of North Hungary in the late 13th century and 1337.[103]

Some early toponyms indicate primitive gold mining that exploited outcrops. The Deed of Foundation of Garamszentbenedek Abbey, dating from 1075, mentions a place called Aranyas ("of gold") beside the river Arieş in Transylvania. A census of the estate of Bakonybél Abbey in 1086 mentions a mons aureus, or golden hill.[104] The name of Zlatna in Transylvania derives from the southern Slavic word zlato=gold.[105] This implies that gold was mined here by the Slavs who gave the town its modern name, as well as the Romans, who are known to have been active in mining in the area.

Gold mining in the Kingdom of Hungary, particularly the Transylvanian Ore Mountains, became very productive in the second half of the Árpád era. Written sources from around 1200 tell of substantial precious metal exports to Austria and Venice.[106]

A characteristic of natural ore deposits is that they rarely contain non-ferrous metals in isolation. Rocks bearing mainly silver or copper frequently contain small quantities of gold, and gold mines often produce some copper ore. The early sources rarely mention non-ferrous metals other than gold or silver, because of their much lower value. A rare exception is the inclusion of copper in a list of goods transported from Hungary to Austria around 1200.[107] We have much more information on Hungarian mining from the second half of the thirteenth century, when operations escalated and related documents proliferated. The 1255 Buda customs regulations mention copper, silver, iron and lead among the commodities in trade. Lead was an ingredient of copper alloys, and essential to the contemporary smelting process for precious and non-ferrous metals. The accounts book of Banská Bistrica for the late fourteenth century mentions mercury produced by residents of the town. This operation was probably based in Ortut, half way between the town and the gold-producing Kremnica, because there is a source from the early sixteenth century that mentions old, out-of-service mercury mines. In addition, ortut is the Slovakian word for mercury. Mercury was essential for the medieval method of assaying used when gold was bought.[108] The Esztergom customs regulations of 1288, setting the duty payable on lead and copper (which was twice as valuable), probably confirmed the rules from the decades prior to the Mongol Invasion of 1241-1242.[109] Iron, lead and tin were mentioned among metals exempt from crown taxation in Jasov in 1290.[110] There is only indirect evidence, however, for the mining of tin in Hungary in the early period. Small amounts may have been produced at some sites that are known to have been worked later, in the modern era, such as Cinobaňa in what was Nógrád County.

Mining of other minerals

The iron industry that grew up in West and North Hungary around the two Vasvárs up till the thirteenth century must have supplied the raw material for forges in the rest of the kingdom, where iron ore was not to be found. The smiths worked for the crown or large landowners. Transport and distribution were under central control. There is documentary evidence from the second half of the thirteenth century of iron being regularly supplied to the smiths of Pannonhalma Abbey from Vasvár in Vas County. Iron-producing sites at other

[103] Györffy 1963–1998, IV. 56–57. The whole latin text of the 1337 charter (misdated to 1307) Wenzel 1880, 318–319. The summary of the charter with good dating Kristó et al. 1990–2009, II. 1306–1310. between nr. 134. and 135.
[104] Wenzel 1880, 10–11. and 24.
[105] Kiss 1997, II. 798.
[106] Benke 1996, 34–35.
[107] Wenzel 1880, 23.
[108] Zsámboki 1982a, 23. and 30., Benke 1996, 128.
[109] Györffy 1963–1998, II. 260–261.
[110] Heckenast 1980, 6.

points of the kingdom met some local needs. For example, sources frequently mention a mining operation around Pécsvárad (in the Mecsek Hills). Research in this subject is helped by archaeology as well as documents. Excavations of several settlements have found remains of bloomeries and/or iron slag. The iron industry went through radical changes in the thirteenth century. The ore in some areas was worked out, and some iron-producing settlements and their inhabitants fell victim to the Mongol Invasion of 1241-1242. In the second half of the century, the arrival of settlers from the West bringing more advanced mining and smelting techniques caused the iron industry to shift to new areas.[111]

Several Árpád era iron ore pits have been found and excavated in what is now West Hungary and the neighbouring Austrian area of Burgenland. Iron ore was usually extracted from soft ground rather than hard rock, and the pits are usually a few metres deep and of similar width. The danger of collapse usually prevented pits or tunnels being dug deeper into the ground. Since iron ore could be found near the surface over a large area, it was simpler and safer to open a new pit than deepen an existing one, which required lining and reinforcing with beams. The bloomeries were set up near where the ore was extracted, usually near a river or stream. Such a smelter could process only a few kilograms of ore each time it was fired.[112]

The Transylvanian salt mines were worked continuously from the Conquest onwards. The early seats of the Transylvanian ispáns (e.g. Dej, Turda and Cluj) were all set up near salt mines. Salt mining may also have started in the first half of the Árpád era in Solivar near Prešov in Upper Hungary.

We know from archaeology and the study of historic buildings that stone from Árpád-era quarries was mostly used to build forts and churches, although some – including marble – was also occasionally used for royal palaces and the residences of prelates and high lords. In the thirteenth century, more and more town houses started to be built with stone cellars. Limestone, easily-worked but durable, was the favoured stone for building. The settlements which grew up beside quarries of good building stone kept up a high level of expertise in quarrying and stonecarving for several centuries, and received orders from far afield.[113]

Limestone was also needed for the lime used in building. Some of the quarries still working today are known to have opened in the Middle Ages, although this very continuity makes their origins difficult to trace, because early workings have been obscured by the activity of later generations.

Most medieval vessels for storing, cooking and serving were generally made of clay. The same raw material was used for lamps, house walls, floors, ovens and fireplaces. Despite its universality, we know little about where or how the clay was extracted. The problem is similar to that of quarries. The clay pits near some settlements may have been the same as those being used in the twentieth century. Those which were abandoned would easily have deteriorated, disappeared and become unrecognisable, or at least be impossible to date for lack of finds.

Mining from the mid-thirteenth century to the end of the Middle Ages

Béla IV (1235-1270) had plans to bring in settlers when he ascended the throne, although they only started to be realised after the Mongol Invasion of 1241-1242. With a view to raising sovereign revenues, many mining settlements were founded and some remote forest villages in the Transylvania Ore Mountains and North Hungary were raised to the status of

[111] Zsámboki 1982a, 25–26.
[112] On the overview of ore mining and working: Heckenast et al. 1968.
[113] Good overview of the problem: Kőfalvi Imre 1980, 241–282.

towns in the second half of the thirteenth century. Some decades later, a mining region grew up centred on Baia Mare in the east of Szatmár County.

These events changed the legal status of mining and mines and the social status of mine workers, mostly German speakers, who now formed a substantial section of the population. Mines in the late Árpád era were appurtenances of the land on which they lay, and so could be worked by ecclesiastical or secular landlords as well as the king. The landowners also took ownership of the precious metals mined. In the thirteenth century, the crown adopted from the Holy Roman Empire the institution of mining regale. This made the mining of precious metals and copper a royal privilege, and the king could take possession of land on which they were discovered. Consequently, the king frequently took land away from private landlords who discovered precious metals and intended to open mines. In most cases known of from the thirteenth century, the landowner was compensated with land of equal size, but received none of the profits from gold or silver mining. It was only by exceptional royal grace that some nobles or bishops were allowed to keep their mines and enjoy the revenue.

The German freemen miners, like the other hospites ("guests") enjoyed many privileges and freedoms (free election of judge and priest, tax benefits, customs duty exemption, freedom of movement, etc.) from the king or landlord who settled them. The wealthiest of their villages grew into royal free towns, and the lesser villages, including those on private and ecclesiastical estates, became oppida (no larger than villages, but with some privileges). Mining society became more differentiated as the industry developed. The mining entrepreneurs who ran the mines and traded the metal lived in the centre of the town, separated from the skilled and unskilled mineworkers in the outskirts, or beyond. This stratification was not rigid in the early centuries, and there are recorded examples of social mobility in both directions. For a long time, a middle stratum of mine workers with some entrepreneurial status existed between the wealthy mine-owning metal merchants and the hired labourers. New mining technology also came to Hungary from the West, brought by the settlers. They also brought expertise in prospecting, and within the hundred years or so following the mid-thirteenth century, all of the ore-bearing areas in the kingdom had been discovered, and their exploitation commenced. This all led to a sudden boom in Hungarian precious metal production in the second half of the 13th century. At that time, the emphasis was on silver, the raw material for the coins which were in circulation at the time, denars; documents from that period much more rarely mention gold mines (such as Rimavská Baňa, Jasov and Pezinok). Gold sometimes occurred alongside silver as a kind of "by-product".

The developments of the second half of the thirteenth century, what is often looked on as the first golden age of Hungarian mining, came to a halt for a few decades during the wars over the throne after the House of Árpád died out. The weakening of sovereign power and lack of law and order worked to the detriment of the mines.

Around 1320, Charles I extended his power over the entire territory of the kingdom, including the mining regions. His economic and financial reforms fundamentally changed the structure of precious metal production in Hungary. What had previously been the kingdom's only coin, the relatively low-value denar, was joined in 1325 by the gold florin, which was of durable value – i.e. was not subject to the annual exchange obligation. The changeover from silver to gold in the cash economy shifted attention to gold in mining and smelting too. Within a few years, new sites based on gold mining had been set up and were flourishing, taking the ascendancy over the previously-central silver mining areas. The regional chambers in charge of the minting of coins moved: in Transylvania from Rodna to Baia de Arieş and Abrud; in the Garam region from Banská Štiavnica to Kremnica, founded in 1328; in Spiš from Gelnica to Smolník, founded in 1327; and in the newly-discovered gold field of Szatmár, a chamber was set up in Baia Mare. The laws of Charles I resulted in unprecedented development of mining. Inhabitants of royal mining towns and mining settlements could

freely prospect for ore anywhere in the kingdom. The King no longer stripped the landowner of title to land where gold or silver was found and a mine was opened, although the mine still worked for the crown. To give ecclesiastical and secular landlords an incentive to prospect for ore deposits, Charles I assigned them one third of the urbura or rent payable to the king by mine-operators. Urbura was paid by mine operators, the entrepreneurs contracted to the crown; this was equivalent to one tenth of the gold produced and one eighth of the silver and other metals. Charles I established a monopoly in precious metal, obliging everyone to redeem the gold and silver they mined. It was forbidden to trade in this or take it out of the country. The royal chambers took a 40% profit on the gold and silver, meaning that the mine operators who redeemed it received in return coins containing that much less gold and silver. At that time, mining precious metals was a lucrative business even at that rate of redemption, because the gold came from the surface or only just below it.[114]

The measures taken by the first Angevin king gave mining an unprecedented boost. The kingdom's yield of gold and silver was highly variable, often changing from year to year. The discovery of a new goldfield could abruptly increase the annual output, and the working-out of a large mine, or its flooding by groundwater, could reduce it just as suddenly. Even given these fluctuations in production, there is a generally-accepted estimate that Hungary's mines produced at least one third of the known world's gold output, and 80-90% of Europe's, in the fourteenth century. The crown was concerned with silver as well as gold: several gold-producing settlements were granted charters as towns, and the freedoms of existing towns were confirmed. Hungary's silver production had a distinguished place in Europe, too, second only to Bohemia. Some 2500 kg of gold and 10,000 kg of silver were produced each year. Signs of falling production proliferated towards the end of the Angevin era, but Hungary remained Europe's leading gold producer in the fifteenth century too. Earlier estimates put the annual amount of gold produced in the kingdom at the end of that century at 1500 kg, and silver at 3000 kg.[115] More recent research, and surviving chamber documents from the late fifteenth century, however, show that the number of gold florins coming out of the country's mints in the late 1480s could have been no more than 327,000.[116] This would have needed some 1150 kg of gold each year.

Charles I divided the country among ten mint chambers, which collected the urbura as well as minting coins. At the chamber seats, raw gold and silver from the mines was assayed and weighed, and minted coins were paid out in exchange for the gold surrendered. The mint further refined the precious metal where necessary and struck new denars, grossi and gold florins. There was a chamber count at the head of each chamber, usually not a royal official but a wealthy entrepreneur who paid a fixed rent for the lease of the chamber, carried out all of its functions, and took all of its revenue. In order to maximise their revenue, the chamber counts had to keep track of everything due to them, which involved strict inspections of the mines under their control to determined how much ore was being brought to the surface. In addition to their financial function, the chamber counts held the position of judge over their own officials, the mines, the miners and the mine operators. This system fundamentally remained in effect until the end of the medieval period, although changes were made during the rule of Charles I's son Louis I (1342-1382). The number of entrepreneurial chamber counts started to decrease in the second half of the fourteenth century, and more royal officials were placed in charge of the chambers.[117]

[114] On the transformaitons from the mid-13th century to the reforms of Charles I: Zsámboki 1982a, 16–17. and Heckenast 1994, 80–82.
[115] Zsámboki 1982a, 17–18.
[116] Gyöngyössy 2003, 62.
[117] Benke 1996, 60–61.

Written sources on non-ferrous metals in the late Árpád era are most numerous in the case of copper. The first mention of copper (among items subject to fair duty in Buda) dates from the same year as the foundation and chartering of Banská Bystrica, 1255. Having initially been a site of silver and gold mining, the town became the centre of the Hungarian copper mining industry in the fourteenth century. Other large copper deposits were discovered nearby, at Ľubietová and Brezno. There was also significant copper mining in other parts of what are now the Slovak Ore Mountains. A common characteristic of nearly every copper field is that other metals were also mined there, or that the copper ore contained some gold or silver. A substantial proportion of copper coming out of the mines went for export, to markets as far away as England in the fourteenth century. There were exports to Austria even in the Árpád era, and Venice was another important destination. Much of the copper was sold in an unrefined state.[118]

Hungarian mining appears from the sources to have suffered from a severe lack of home-grown capital. The mine-owner's job was relatively simple and easy as long as the ore outcrop or lode was wide and formed a rich strip which could easily be followed into the ground or the rock. Even then, mining carried substantial costs arising from processing the ore. Water-driven ore crushers and bellows built with expertise of millwrights from the West started to appear in Hungary in the first half of the fourteenth century, and water-driven water-raising wheels towards the end of the century. The water to drive these mechanisms often had to be led in from a distance of several kilometres, requiring enormous excavations and/or the construction of wooden channels.[119] Once they were built, their operation and maintenance involved considerable further expense. Then there was the enormous amount of wood which had to be cut for digging the tunnels and propping them up, for building other structures, and for firing the smelters. The latter required great quantities of charcoal. The separation of gold and silver also required glassware, which was made in local workshops.

Mines could be profitable even with such expenses for a while, but if the ore-bearing lode narrowed, or the pit ran into harder rock which was more difficult to hew, it soon started to make a loss. Mine operators frequently abandoned a rich lode long before it was exhausted because groundwater to burst into the workings at a rate that was impossible to drain or pump out. In that case, the water could only be drained by cutting an auxiliary tunnel under the first into which the groundwater could be drained. When a working pit was inundated, it could be several decades before an entrepreneur came along prepared to meet the costs of the drainage shaft in the hope of profit from continued working.

Following its medieval golden age, which lasted from the 1330s to the end of the fourteenth century, Hungarian mining started to show signs of decline in the early years of the fifteenth. The rich gold- and silver-bearing rocks near the surface had been worked out, and pits had to be dug ever deeper, in pursuit of poorer and thinner lodes. With the technology of the time, draining water from the mines was an enormous challenge. References to inundated, unworkable pits are regularly found even in later fourteenth century sources. A decree issued in 1385 gives an idea of how prevalent this problem was in the mining towns along the River Garam. It required any mine operator who ceased operations because of flooding, and had no intention of attempting drainage even in future, to relinquish operation in favour of others. The crown took several measures to support mining in the following decades. These privileges did not bear much fruit, and the production of non-ferrous metals dwindled steadily during the fifteenth century. In 1479, King Matthias exempted the inhabitants of the previously-burgeoning gold-mining town of Kremnica from payment of all taxes and urbura

[118] Zsámboki 1982a, 23. On the town around the River Hron: Wenzel 1880, 52–68., to the settlements and the mining of the Spiš-Gemer Ore Mountains: Kollmann 2005, 47–122.

[119] On the 14th century technical innovations: Heckenast 1980, 3–10. On the long channel systems: Benke 1996, 14–15.

for several years, but still failed to stem the town's decline. Most of its mines were standing in water, and remained so for several decades.[120]

Hungarian copper mining reached its zenith between the late fifteenth and mid-sixteenth centuries. Its rise was in large part due to János Thurzó's technical and organisational brilliance, combined with capital provided by the German Fugger family. The technical advances were a new means of harnessing water power, the use of manual pumps, and improved means of raising water and purifying copper. The other major factor was the rising demand for copper in western parts of Europe. The introduction of new machinery and techniques also had a favourable effect on other branches of mining, although none flourished to anything like the same extent as copper mining.[121]

Iron production developed in the years following the Mongol Invasion through immigration of large numbers of German miners and smelting workers, combined with the harnessing of water power. The centre of gravity of the iron industry shifted to the Slovak Ore Mountains region, around Štítnik, Rožňava, Dobšina, Medzev and Gelnica. After the mid-thirteenth century, there was also a major changeover in technique. Smelters stopped using bog ore – obtainable near the surface – in favour of iron ore, which could be extracted only from deep pits.

Lesser iron mining operations in the thirteenth to fifteenth centuries were those of the Garam country, the valley of the Crişul Negru river in Bihor, Rimetea in Transylvania (from the early fourteenth century) and Hunyad County (from the fifteenth century).[122]

II. Mines and mine operators through contemporary sources

Until recently, research into mining in medieval Hungary relied almost solely on written sources. Narrative sources, laws and decrees, and – much more numerous but less informative – litigation documents and privileges have at least yielded a reliable list of the places where mining was pursued in the Carpathian Basin at that time. Since only a few dozen documents survive from the eleventh and twelfth centuries, we have extremely little information on this part of the Árpád era.

To even partially lift the mist surrounding the history of mining, we must call upon the help of workers in several disciplines. Data on different regions or towns can be mutually complementary, and by comparing them we can gain a much clearer insight into previously unanswered questions. We will now look at some details of the beginnings and development of non-ferrous metal mining and metallurgy between the thirteenth and sixteenth centuries, a story that can be more thoroughly fleshed out than anything in the early Árpád era.

Mines and lodes generally followed surface outcrops. In 1263, Béla IV granted settlers in Partizanske Ľupča in Liptov the privilege of seeking gold, silver and copper freely in the forests and fields if they paid the customary taxes to the King. Several settlements owed their foundation to the discovery of ore on the surface. One such was the former forest estate of Kremnica, granted a royal charter in 1328.[123] Elsewhere, already-existent but minor settlements started to grow when ore was discovered nearby. Despite their privileges, most of the newly-settled miners did not – indeed could not – give up farming, because the exhaustion or flooding of a mine could be followed by several decades when there was no mining activity, and no income. Most of the miners of Rimavská Baňa, in 1268, had land which they

[120] Zsámboki 1982a, 17–18., Benke 1996, 68. and 78–79.
[121] Zsámboki 1982a, 23–24.
[122] Zsámboki 1982a, 24.
[123] The Hungarian summary of the charter: Kristó et al. 1990–2010, XII. nr. 473. On Kremnica: Wenzel 1880, 44–51.

regularly tilled and sowed. Old, abandoned gold mines were mentioned there in 1271.[124] The more productive the mines around a village or town, and the more seams were being worked, the less the inhabitants were dependent on agriculture.

Where miners founded a completely new settlement in the uninhabited mountains, they took possession of the entire surrounding area and – usually – had free use of it. Sometimes, however, the miner-settlers found Hungarian- or Slavic-speaking people, tillers of the land with different ways of life, already living in their designated place of habitation. A good example is what is now Nagybörzsöny, where there are Slavic and Hungarian toponyms in the surrounding area telling of native populations joined by German miners in the thirteenth century (and first mentioned in 1312).[125]

Some mining settlements are not recorded in any documents, and the only sources of data are archaeology and art history. In many cases, church carvings and frescoes betray a link to mining at some time. There are some undocumented places where only local Germanic place names or family names indicate the coming of an alien ethnic group which has long since assimilated.

We seldom have detailed information on the number of settlers, or the productiveness or means of mining operations. The large mining towns certainly had several pits in operation simultaneously. Elsewhere we hear only of one seam being worked. In such places, when the seam was exhausted, the miners either moved away or turned to farming or crafts for their living.

When a mine was opened, the point where an outcrop of precious metals was found, only a few workers were required for the first few metres of excavation. The lode of silver-, gold- or other precious metal-bearing ore commonly had a thickness of no more than two spans, and sometimes only a few fingers; it was hewed by one or two miners with chisels, hammers and pickaxes. Since the rock around the ore had no value, as little as possible was broken, so that the tunnels were often very narrow. The miners had to crouch as they worked the lode, and the labourers were similarly bent over as they pulled out the baskets of ore by hand, or on their backs. In broader tunnels, the ore was carried by barrow or handcart. Where the lode descended vertically, pits a few metres across extended downwards to depths of several tens of metres. The ore was brought up either by labourers climbing a ladder with a basket on their back, or on a rope with a wooden hoisting mechanism. In the larger mines there were several such tunnels one under another, so that the ore had to be brought up several "floors". In the late medieval period, hoists were driven by workers on horizontal-axis treadmills or by animals, usually horses, walking around a vertical-axis mechanism. These were complex structures comprising several wheels and cogwheels of different sizes, and required special expertise to make and maintain. Similar techniques were used for raising water. The poisonous gases that filled the pits and hampered the work in a similar way to the water had to be led out through ventilation shafts dug for the purpose.

Detailed information on the mining in the Garam region around 1500 has been obtained from surviving regulations, decrees, accounts, descriptions and other related documents. Output was subject to wide fluctuation, as illustrated by the case of Špania Dolina near Banská Bistrica, where 25 miners were employed in 1535. This was just before the discovery of new copper deposits, and only eight years later – in 1543 – the number of miners had risen to 170. At nearby Hodruš in 1535, good ore was extracted for a short time, during which the mines and processing works employed a total of four thousand workers.

As soon as the lumps of ore were brought into the daylight, they were graded so that rocks not bearing copper, gold or silver did not go for further processing. This job was being

[124] Györffy 1963–1998, III. 270.
[125] The overview of the archaeological and archival sources of the medieval settlements: Dinnyés et al. 1993, 205–207.

done by women and children in Banská Štiavnica in 1515. After separation, the ore was taken by wagon from the mouth of the mine to crushers and smelters, which were usually beside rivers. (Before mechanical mills were used, the ore was crushed in to opposing hand driven carved-stone mills.) Having been reduced to pieces a few centimetres across, the ore passed to the smelters where they were heated to high temperature to separate the non-ferrous metals from the rock. The little smelters of the first half of the Árpád era, taking a charge of only 2-3 kilograms, gave way to much larger versions that used enormous water-driven bellows.[126]

Smelting required large quantities of charcoal, so that each smelter kept a dozen or so woodcutters and charcoal burners busy in forests which could be quite far away. Where gold and silver occurred in the same lode, it was best to separate them. The chemical techniques for this probably came to Hungary with the large number of miners who settled there in the thirteenth century. The aqua fortis used for separation could only be withstood by glass vessels, so that it was metal refining that launched glassmaking in Banská Štiavnica and other mining towns in the late Árpád era.

In the late medieval period, the mine-owning entrepreneur was obliged to take the raw gold or silver resulting from the smelting and refining processes to the nearest chamber office. There, royal officials assayed the precious metal and redeemed it at the currently applicable rate, which started at 40% in the reign of Charles I and diminished steadily thereafter. Copper was usually sold in the semi-refined "black copper" state in the late medieval period.

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[126] On the data to the mining in the region of the river Hron analyzed in the two last paragraphs, see: Benke 1996,
14–15. and 87–91.

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Salt mining and the salt trade in medieval Hungary

István Draskóczy

Nihil enim utilius sale et sole
(Isidore of Seville)

Árpád era

There is salt under the earth in many places in the Carpathian Basin, the territory of the medieval Kingdom of Hungary. The richest deposits are in Transylvania and Maramureş (now in Romania and the Ukraine). Another important location is Solivar in Šariš County, Slovakia, where water from the salt well was evaporated. The primary mining areas in Transylvania were Ocna Dejului, Sic, Cojocna, Turda, Ocna Sibiului and Albeştii Bistriţei. In Székely Land of Transylvania, salt was mined in the "salt country" (Sóvidék) of Ţinutul Ocnelor, where the mines in Rona de Jos/Rona de Sus were in the ascendancy towards the end of the medieval period.[127]

Salt was certainly mined in Transylvania during the Roman Empire. When the conquering Hungarians invaded Transylvania, they took over mines which had hitherto been controlled by Bulgars. The ispáns' castles and castle domains set up there during the formation of the Hungarian state served to defend the salt mines as well as the land. In Maramureš, medieval mining started only in the late thirteenth century.[128]

The salt mines became crown property when the kingdom was founded, and although ecclesiastics and in exceptional case landed nobles also gained possession of salt mines in the Árpád era, the principal mining areas remained under royal control throughout the Middle Ages. This gave the king power over mining, carriage and trading of salt, and as a result, salt accounted for 6.6 per cent of crown revenue in the late twelfth century. Since salt was an essential food and preservative, its place among the main commodities of the time was comparable to that of wine.

Merchants bought salt in the mining areas and transported it into the interior of the kingdom. In addition to the crown, some ecclesiastical institutions had interests in the transport and trading of salt. This was because the crown and the church were the largest landowners in the country, and their lands were home to large numbers of servant folk whose duties included various kinds of carriage. Salt was also a major foreign trade commodity, exported to the West, the Balkan Peninsula and sometimes to Poland. Foreign trade was also under crown control.

Certain church institutions were granted royal privileges to carry specified quantities of salt from Transylvania, free of customs duty, to their seats, where they could store it and sell it. Thirty-seven church bodies are known to have held such privileges in the 1230s.[129]

Data on salt mining and trade is more plentiful from the thirteenth century. Andrew II (1205-1235) placed great importance on the *regale* revenues. He introduced a chamber system, renting out certain royal sources of revenue (such as minting of coins and salt) to Muslim and Jewish entrepreneurs, who had the necessary financial expertise.[130] King Andrew's objective by this policy was to establish a royal monopoly on trade in salt. Crown salt warehouses, or chambers, were set up. These were located mainly in border areas (such as

[127] Kubinyi 1988, 213–214, Sófalvi 2005, 170–183.
[128] Bóna 2001, 82–86, Vékony 2004, 655-661; Györffy 1963–1998, IV. 114.
[129] Paulinyi 2005, 15–17, Weisz 2007, 43–44.
[130] Kristó 2001, 480.

Vasvár, Sopron, Pressburg), but some certainly operated in the interior, at Szeged, Sălacea, and Székesfehérvár. These centres were headed by salt officials, overseen in turn by the county ispán or *curialis comes*. In Transylvania, the county ispáns or voivodes held authority over the mining areas.[131]

This crown policy ran into opposition from church quarters, jealous of their old trading interests. In 1233, they forced the king to a settlement at Bereg. The king promised not to appoint Jews and Muslims to the head chambers, mints, the salt trade or taxes. New rules were drawn up for trading in salt. The king permitted the church institutions to buy salt in the mining areas and store it at their seats. The royal salt officers could buy salt from them at regulated prices twice a year (firstly 27 August to 8 September, and secondly 6-21 December). If they did not do so, the ecclesiastics could use the salt themselves or sell it freely, the profit being enjoyed by the church institution. The settlement also specified how much salt 29 church institutions could use for their own profit.[132]

The charter tacitly acknowledged the king's trade monopoly, but gave some benefits to church authorities. Nonetheless, the church was forced to renounce a substantial proportion of its revenues from trading in salt.

Salt mining in Transylvania had to be completely reorganised following the 1241 Mongol Invasion.[133] Béla IV (1235-1270) placed particular importance on salt revenues and took great pains to revive mining. The officials at the head of royal mines and salt warehouses in each town were accountable to the king's *magister tavernicorum*, and coordinated by the royal salt-chamber organisation. Charters dating from the reign of Andrew III (1290-1301) refer to the office of chamber count (*comes camarae*).[134]

Crown measures to further the development of the towns included the offer of privileges to incomers who settled in mining areas. Transylvanian mining towns were settled by Germans.[135] Production and transport were put on a new footing.

Before then, the workers in the mines were legally servant folk, and transport was the job of other servants specialised in carrying salt for the crown or the church.[136] By the second half of the thirteenth century, charters were referring to freemen in connection with mining. The inhabitants of mining towns were responsible for mining and in all of these towns they were entitled to spend one week cutting salt from the royal mines for their own benefit.

When Béla IV's conflict with his son Stephen came to and end in 1262, the agreement they made covered salt in some detail, an indication of its importance to the crown as a source of revenue. The charter distinguished two kinds of miners. Miners in one category, referred to as *salifossores*, were divided half-and-half between the King and his son Stephen. The other class of miners, *salium incisores*, were wage labourers hired by both parties at their own expense.[137]

A fragment of a thirteenth-century charter states that a Hungarian abbey (Bakonybél) received 24 *mansiones* with a salt mine and three ships, *ut ipsimet lapides salis efodiant, fossatosque deferant*.[138] In 1248, the Archiepiscopate of Eger was granted *unum fossatum sive foveam salifodine liberam* in Ocna Dejului with entitlement to freely *sales de eadem extractos* and carry it free of customs duty by land and water to Eger.[139] Around 1230, Bartholomaeus

[131] Weisz, 2007, 47–49; Zsoldos 2011, 11.
[132] Knauz et al. 1874–1999, I. 293–294, Kubinyi 1988, 214–217.
[133] Jakó 1997, Nr. 209.
[134] Knauz et al. 1874–1999, I 478, Zimmermann et al. 1892–1991, I. 166, 170, 182, 293; Weisz 2010, 81.
[135] Szende 2011, 34–35.
[136] On the legal situation of those living of church and royal estates: Bolla 1998, Györffy 1972, 292.
[137] Knauz et al. 1874–1999, I. 478.
[138] Györffy 1992, 255.
[139] Kondorné Látkóczki 1997, 15.

Anglicus noted of Hungary: *sal etiam optimum in quibusdam montibus effoditur*.[140] An early fourteenth-century description of Hungary says of salt mining: *in partibus transiluanis sunt maximi montes de sale, et de illis montibus cauatur sal sicut lapides*.[141] This information suggests that mining originally involved near-surface salt strata rather than being dug from deep underground. It was extracted by digging holes, a practice which continued for as long the reserves lasted. The "salt diggers" (*salifossores*) mentioned in the agreement of 1262 were probably engaged in this traditional way of extracting salt. It must have been them who opened up the pits. Other workers were the hired *salium incisores* (salt cutters). A 1291 document records that the *incisores* in Ocna Dejului received the equivalent of 4 *pondus* in denars for every 100 salt blocks.[142] We do know exactly what their work consisted of at that time, but the same term was used in the late Middle Ages for miners who cut out the salt underground. They probably had similar duties in the thirteenth century.[143] If so, then the start of widespread underground mining can be dated to this period.

Salt in the mines was cut into blocks; these varied in size, probably from the Árpád era onwards. Those carried over land by wagon were cut to a different size than those taken by boat. The most commonly used cargo boat was one of the largest vessels of the time, with a constant and well-known capacity.[144] This is clear from the fact that in the twelfth and thirteenth centuries, the quantity of salt church institutions were permitted to carry free of customs was usually specified in a number of boatloads.

The boats carried salt from the mines of Transylvania along the Maros/Mureš and the Szamos/Someş rivers, and from Maramureš along the Tisza. Szeged, at the confluence of the Maros and Tisza, largely owed its prosperity to salt. In the Árpád era, salt was carried from Transylvania through the "Meseš Pass". The most important point on this route was Sălacea, chosen as the site of a royal salt chamber.[145] It was at this time when the routes for carrying salt though the kingdom were established.[146]

By the end of the Árpád era, the crown had strengthened its hold on salt mining and trade, but had not established a monopoly. Some mines were still in private and church ownership. Much is revealed by the fact that trading in salt required a royal permit.[147] It was Charles I (1308-1342) who, in the first third of the fourteenth century, finally established the full royal monopoly on mining and trade. With the single exception of Solivar, mines under the control of private owners disappeared. By the Angevin era, the church's trading privileges had also come to an end.[148]

The changes in Hungary were paralleled in neighbouring Poland, where similar events took place in the second half of the thirteenth century. In Bochnia, and later in Wieliczka, it was not Polish workers but German miners with experience in ore mining who started to bring up rocksalt from deep underground. The people of these two towns received major privileges. Boleslav the Shy, Prince of Krakow (1227-1279) and husband of Béla IV's daughter Kinga, abolished all private salt mines in 1278, and withdraw all former salt-related grants. Thus all mining and extraction in Little Poland came under the Prince's control, laying the foundations for the state salt business. The salt count (żupnik) of Krakow was invested with trade

[140] Gombos 1937–1943, I. 390.
[141] Górka 1916, 46.
[142] Zimmermann et al. 1892–1991, I. 170.
[143] Harmatta et al. 1987–, V., 122. In Poland for the miners were referred with the latin word *sector salis* (salt cutter): Lengyelországban a bányászra a hasonló értelmű *sector salis* (vágó) latin szót használták. Wyrozumski 1968, 133.
[144] Górka 1916, 47.
[145] Paulinyi 2005, passim, Knauz et al. 1874–1999, I, 293–294, 478.
[146] Benkő 1998, 169–176.
[147] Zimmermann et al. 1892–1991, I. 104, 133–134, 166, 170, 182.
[148] Paulinyi 2005, passim; Kubinyi 1988, 217.

prerogatives and governed salt affairs starting in the late thirteenth century. Salt imports were banned. It was also during Boleslaw's rule that a class of miners known in Latin as *sectores* were granted the privilege of working their own assigned lodes, which were heritable, and replaced on being worked out. They were paid wages for their work. Mining output expanded rapidly after 1278.[149]

Late Middle Ages

In the Angevin era, the salt chambers built on their Árpád-era foundations. All salt mines and salt offices (both known as "chambers") were put under the direction of the salt count of Transylvania. The same person frequently held the office of "thirtieth" (customs) count, making for more effective enforcement of the ban on imports of foreign salt into the interior of the country. Hungarian salt was also exported to the Balkans in the fourteenth and fifteenth centuries, but exports to the west and north were eventually stifled by increasing production in Austria and Poland.

Parts of the kingdom which lay far from the mining areas brought in salt from neighbouring countries, and in the second half of the fourteenth century, not all of the chamber counts were Hungarian – some Italians are to be found among them.[150]

In a decree of 1397, King Sigismund (1387-1437) laid down the rules by which salt chambers worked in the remainder of the medieval period. These were the basis for a system which stayed in place until the abolition of the monopoly in 1521. Inside the kingdom, consumers and small traders bought salt from the royal salt chambers. Salt could also be bought at the mines. A royal permit or privilege was required in both cases. King Sigismund also fixed the price of salt. 100 blocks could be purchased for 1 florin in the mining areas, but the official price was 225 denars at Szeged (100 denars=1 florin at that time), 300 denars in Buda, 400 denars at Košice and at Kovin on the Lower Danube, and further away – in places such as Zagreb, Vasvár, Sopron, Győr, Pressburg, Trnava and Trenčin – the official price was set at 5 florins. These prices – as András Kubinyi has verified – did not change until the early sixteenth century. Then there came a differentiation in price between the large blocks carried by wagon and the small blocks carried by boat. In Transylvania, the latter was sold for 1.1 florin and the former for 3 florins. We also know from the 1397 charter that salt from the Maramureš mines was to be sold and used in the land bounded by the Tisza and the Zagyva, and the rest of the country had to use salt from Transylvania. The decree banned imports of foreign salt. Sigismund revived some chambers which had lapsed in previous years and set up new ones. The decree set the River Száva as the boundary within which people were constrained to buy Transylvanian and Maramureš salt. Inhabitants of the lands to the south – Slavonia and Croatia – used salt from the Adriatic Sea.

Although Transylvania and Maramureš supplied different areas, salt was under the administration of a national salt count after 1397. This office was held by the Florentine man of business Pipo of Ozora (Filippo Scolari) from 1400 until his death in 1426. This put the system under unified control. He was responsible for putting the 1397 measures into effect, including the setting up of further chambers. Governance of the chambers changed after his death. Sigismund sometimes assigned different people to each one, and other times put them under central control (e.g. the Tallóci brothers between 1438 and 1440). Ozora preferred to bring in Italians experienced in administration, and several of them remained in the salt administration after his death, seeing business potential in it. By the 1460s, however, we find only Hungarians working in the chambers. Some of these were local townspeople, and others

[149] Wyrozumski 1989, 274; Piotrowicz 1991, 272–276.
[150] Hóman 2003, 155–157, 237–243; Draskóczy 2004a, 285–293.

members of noble families. Italian men of finance were also to be found in the salt offices of neighbouring Poland.[151]

Matthias (1458-1490) put through a reform of the treasury, placing all financial administration under a treasurer who was thenceforth in charge of salt mining and the salt trade. Another important post was that of the Transylvanian salt chamber count, whose duties often extended to supervision of Transylvanian taxes, customs and mines. It is remarkable that many treasurers had previously worked in salt administration. When Matthias married Beatrix, daughter of the King of Naples, in 1476, he promised her Maramureš. The Queen took possession of the mining area around 1480, together with the North Hungarian salt chambers which sold salt from there. This territory extended to Nitra and brought in substantial revenue for the Queen. From then on, Maramureš and its associated salt chambers formed part of the queen's estate.[152]

A large number of chambers were needed to prevent foreign salt from finding its way on to the market, and to enforce restrictions on free trade. The system put in place by the Angevin kings was not equal to this task, which is why more and more chambers were set up in the fifteenth century. King Matthias' efforts to establish a tight network of chambers ran into opposition from the nobility, who demanded a return to the state of Sigismund's reign. By the end of the Middle Ages, by our present knowledge, there were salt chambers in 70 places, including mining sites, and all of them were eventually located in towns. The principal locations (such as Košice and Pressburg) controlled larger zones and had branch chambers. Some areas, however, did not have a salt chamber at al. Such was Somogy County, because its inhabitants lived from selling wine, and it was via this business they obtained their salt.

The writ of the royal chambers did not run to Székely Land in Transylvania, where near-surface salt deposits could be mined cheaply. The inhabitants of this area were allowed to buy locally-mined salt through free trade without travelling to a chamber. In the same way, the Saxon Seats near Székely Land had the privilege of buying salt mined in Székely Land instead of royal salt. Salt from Székely Land was indeed also smuggled elsewhere in Transylvania, in defiance of royal prohibition.[153]

A chambers which sold and distributed salt controlled a district having a radius of 2-3 miles. Royal officials could inspect everybody within this district. The chamber was responsible for enforcing the salt monopoly. It also ensured that if anybody traded in salt they did not do so at the chamber price (i.e. not more cheaply).

The customers who went to the seat of the chamber for salt were primarily the inhabitants of its district. Two miles were equivalent to one *rast*. The district (about 16-19 km) coincided with the narrow market zone of the town, the distance that people living there could travel to the centre and get home the same day.[154]

In the royal mining towns, salt was brought to the surface from deep underground. Two (sometimes three) vertical shafts were dug from the surface. One shaft had at its head a horse-driven mechanism for drawing the rope which raised the salt, stone, soil and water. The second shaft was for the miners to climb up and down on ladders, and the third, where it existed, provided ventilation. The biggest problem was usually water, which had to be raised or drained. To protect against the destructive effects of water, the shafts were lined with buffalo leather or wood. Where the shaft reached the salt stratum, the interior of the mine developed into a bell shape. The mining itself took place on the floor of the mine.

According to an account written by the French knight Bertrandon de la Brocquière in 1433, great rocks of salt were dug out in Hungary and cut into square pieces. The cubes of salt

[151] Draskóczy 2002, 281–284.
[152] Draskóczy 2004b, passim; Draskóczy 2005, 83–95.
[153] Kubinyi 1988, 221–227, Sófalvi 2005, 177–178.
[154] See the chapter of Kubinyi in present volumne. Also: Draskóczy 2010a, 55–56.

he saw on the wagon measured approximately one foot across. His report tallies with an Italian description dating from 1462/63, stating that salt in Transylvania was cut first into large blocks (one manuscript stating they weighed 3 *cantaro*s) and then into smaller blocks of 10-12 pounds.[155]

These descriptions give us an idea of the manual operations involved in salt mining, and it was similar to how miners were still working in the first half of the nineteenth century. The miners first cut out large blocks from the ground of the mine, and then cut them into pieces of the prescribed size. This operation inevitably produced some fragmentary and powdered salt. The fragments were loaded into vessels and sold by the chamber. Blocks or fragments that became dirty or covered with soil as they were being brought out of the mine were set aside and cast into abandoned mines. The greatest enemy of mining was water, which ultimately caused the pits to be abandoned.[156] There are records from the first half of the sixteenth century telling us how deep the salt mines were. King Ferdinand mortgaged the Transylvanian salt mines to the Fuggers, whose factor, Hans Dernschwam, produced a report for his employers in 1528. This tells us that salt was brought up from a depth of 70 *öl*s (approx. 140 m) in one Turda mine and 30 *öl*s (60 m) in another. One mine in Ocna Dejului in the middle of the sixteenth century went down to 52 *öl*s (100 m) and another to 36 *öl*s (70 m).[157]

In 1453/1454, Ulrik Eizinger made an estimate of crown revenues. This naturally covered salt mining. He noted that the blocks cut in the mines were not of uniform size. Sometimes they were too big, sometimes too small, sometimes just right. He stated that the salt *in gleicher gröss müste hawen und schroten*.[158]

We do not, unfortunately, know the size of the salt blocks. Bertrandon de la Brocquière saw them on a wagon and claimed they were one-foot cubes. The equivalent in modern units of the 10-12 pounds mentioned in the Italian description depends on whether the author was using Italian or Hungarian pounds. The weight could have been anything between 3.5 and 6 kg (5-6 kg if Hungarian pounds).[159] The size of the blocks changed in the early sixteenth century, the weight of the blocks carried on wagons being increased. The size of blocks produced varied between mining areas. We know that in Turda, "boat salt" weighed 5.5 Hungarian pounds (=2.7 kg) and "wagon salt" 17.5 pounds (=8.5938 kg). In Ocna Sibiului, the former weighed 10 pounds (=4.9108 kg.) and the latter 22 pounds (=10.8036 kg), so that wagon salt was larger and heavier than boat salt (and so had a higher price), and there were clearly big differences between mining areas. A decree of 1521 standardised the size of blocks throughout the kingdom, and set the chamber price of a hundred blocks at three florins. It seems, however, that the decree failed to take hold, and the old sizes continued in use.[160]

There was a complex division of labour in the mines. At the head of the apparatus was the chamber count. Accounts were kept by the steward. Each mine employed a smith, a bath-keeper, a cook, an equerry, workers specialised in working the hoists, and others who removed salt dust and debris from the mine. The highest-ranking workers were the salt cutters, led by their judge. They divided into two groups, differentiated by their terms of employment: either hired for one year, or on a casual basis. Those in the former group were supplied with cloth (understandably, because their work wore out their clothes), and received

[155] Schefer 1892, 236; Biblioteca Marciana Ms IT VI. 276. 106^{v}: *…el qual sale se cava de algune montagne, sono in Transilvana che sono quaxi in forma de preda, che par marmoro, e fasene pezi a modo de quareli de peso de 10 in 12 libre el pezo,..* 3 cantaro (Bibliotheca Apostolica Vaticana Urb. Lat. 728. fol. 33^{v}–34^{r}.) it would be in between 80 and 100 kgs. Cf. von Alberti 1957, 403–404.
[156] Strieder 1933, 268 – 276, Wollmann 1995, 138–142, Wollmann 1995, 138–142, Niedermaier 1999–2000, 89.
[157] Strieder 1933, 269; Engel 1797–1801, II. 20; On the *öl*: Bogdán 1978, 101.
[158] Bak 1987, 381.
[159] von Alberti 1957, 403–404. On Hungarian pound: Hóman 1916, 115–122.
[160] Engel 1797–1801, II. 38; Kubinyi 1991, 267.

wine on being hired. At the end of the medieval period, they could take home one block of salt a day, and they sometimes received cash subventions. The bulk of their income, however, came from their wages. There were several decrees setting wages, such as in Maramureš in 1435, 1448 and 1498. In the Matthias and Jagiello eras, 10 denars were paid in Transylvania for cutting 100 blocks, despite the change in block size in the early sixteenth century. Later, wages were adjusted to the size of blocks, and more was paid for wagon salt. In the 1527-1528 period, the daily output of a miner in Dej was 70-80 smaller blocks, and in Turda, 40-50 large blocks, so that the average daily rate was 7-8 denars, supplemented by other emoluments. We assume 5 working days a week, averaged over the year. The hard working conditions and meagre wages prompted several protests and combinations, e.g. in 1435. Dernschwam was dissatisfied with the miners, whom he saw as doing little and disorderly work and spending too much time in the tavern. In the summer, casual workers were more likely to work on the harvest.[161]

The chamber was responsible for sending the salt to the interior. Carters were hired from this, mostly inhabitants of mining towns, and some villagers. Surface transport was expensive. The carters had to contend with bad roads and inclement weather. For peasant carriers, agricultural work always came first. Consequently, the wagons usually set off in October, May and part of June.

Salt was also transported by boat (and sometimes by raft). The chamber engaged boatmen (*celerista*). They made the boats at the end of winter, and after left them at their destinations, because the timber was useful in the Great Plain. If one mid-sixteenth-century report is to be believed, they made surprisingly large (probably flat-bottomed) boats. The largest vessel made in Turda could be loaded up with some 60-70 tons of salt. Even bigger boats were made in Dej, which the source claims could carry cargo of 90-100 tonnes. The sources imply that transport was timed for when the rivers were in spate in spring (March and April). There were years when the flood waters failed to appear in Transylvania, and salt did not reach the interior of the country. In the early sixteenth century, the Maramureš Chamber Count, Péter Butkai, claimed that boats could not sail from Maramureš before St George's Day (24 April). The importance of the state of the river prompted considerable efforts in early spring to clear away tree trunks, dismantle mill dams, and prohibit the siting of watermills, which were an obstacle to transport. For the boats to pass along the Mureš/Maros in safety, they had to be assured of a channel at least 40 metres wide. Smaller boats were also used. The arrangement meant that a large proportion of the mines' annual output reached the main Hungarian salt ports (Satu Mare, Tokaj, Poroszló, Szolnok, Szeged) in early spring, and the salt was taken from there to its destination.[162]

It is difficult to estimate the amount of salt that came out of the mines. The kingdom had a population of about three million in the late Middle Ages.[163] Assuming annual consumption per head of 8 kg (including salt used for preserving food and other household purposes), domestic demand must have been about 24,000 tonnes. Much salt was also used in the rearing of large animals. The overall demand may therefore be conservatively (and very approximately) estimated at 30,000 tonnes.[164]

Running the salt monopoly was very expensive, but brought in considerable revenue to the crown. During the reign of King Sigismund, this revenue was 100,000 florins. King Matthias' annual salt revenue was 80-100,000 florins. In the Jagiello era, however, the rewards of the monopoly declined radically. From about 50,000 florins at the beginning of the

[161] Strieder 1933, 273–278, Iványi 1911, 10–30, 98–113, 187–195; Kubinyi 1991b, 264–267, HA Handschriften Nr. 367, Nr. 369.
[162] Draskóczy 2005, 112–116, Draskóczy 2004b, 42–44.
[163] Cf. The chapter of Kubinyi and Laszlovszky in the present volume.
[164] Hocquet 1988, 39. On the contrary Piasecki 1987, 55–57, counts with 10kgs/person.

sixteenth century, the annual sum flowing into the treasury dwindled to 25,000 florins in 1516 and 14,000 in 1519.[165]

Although the royal monopoly was maintained, increasing amounts of salt were sold outside the chamber organisation. The king for various reasons made grants of salt to clerics and commoners, and sometimes made payments in salt. Some had privileges entitling them to a certain quantity of salt.

The churches were particularly frequent recipients of salt. Salt was important to the economy of the Paulines, and they received salt to the value of 300 florins from Maramureš towards the annual upkeep of the grand chapter of the order. Kings made further grants of salt to the grand chapter, and were also fairly generous to the other Pauline houses.[166]

The list of church institutions to enjoy annual salt allowances was not confined to those of the Pauline Fathers, and some received salt in other ways. In 1477-1478, Matthias leased the Buda tithe for 1000 florins. In return for half of this amount, he granted to the Veszprém chapter salt from the Székesfehérvár chamber. In mining areas, priests were due a certain amount of salt. We have information particularly on Khust and the Maramureš towns.[167] In other cases, the King made disbursements to the churches from chamber revenue.

It was common for the king to grant salt to a landed nobleman as a gift or in return for some service. Crown officials received some of their emoluments in salt. In 1504, for example, the Castellan of Buda received payment of 1200 florins in cash and 500 florins in salt. Towns were granted salt towards the construction of town walls.[168] Since chambers never had enough money, they paid their staff partly in salt. If the chamber purchased something (such as carriage and shipping), it frequently paid for it in salt.

Defence against the Ottomans demanded more and more money. Pipo Ozorai, the Tallócis and John Hunyadi met some of the military costs from salt revenue. During the Jagiello era, there was not enough cash to pay castellans and border fort garrisons, and so they received part of their bounty in salt. At Belgrade, for example, the Vojniks were paid 7 florins a year, of which 2 were paid in salt, 2 in broadcloth, and only 3 in cash. Border fort garrisons received salt of total value 20,558 florins in 1504 and 21,484 florins in 1511 (18.2 and 15.2% respectively of total military expenditure). This was equivalent to more than 400,000 blocks of salt. The soldiers received their salt in the smaller "boat" blocks, but it was still a very large quantity.[169] The people of Debrecen enjoyed the privilege of travelling to Transylvania or Maramureš to buy salt, which they could then sell at markets.

Anybody who received salt for any reason could sell it freely, unimpeded by the chambers. There were also salt merchants. A condition of operation was that the merchant be able to prove he had bought his wares legally. He could not sell salt at the seat of a salt chamber, and could not sell at the official price (to prevent competition with the chambers). It was only by special royal grace that somebody was allowed to sell salt at chamber prices.

Mining chambers in Transylvania and Maramureš also sold salt. Their customers were mainly the people of Dej, Turda, the Maramureš chamber towns and the surrounding villages. Most customers could not pay the full price immediately, and many were indebted to the salt office for years. These debts, in some cases, were never recovered. The mining town authorities were forced to sell salt locally in order to cover their costs.[170]

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[165] Draskóczy 2005.
[166] Romhányi 2010, 120–124.
[167] Kropf 1899, 97, Iványi 1911, passim. On the tenth of Buda, see the ssummary of Elemér Mályusz in the Budapest Historical Museum (Cartulary of the chapter of Veszprém, Veszprém; Dec. Budenses 20.).
[168] Kubinyi 1988, 229–230; MOL DL 21279.
[169] Kubinyi 2004; in the financial year 1515/16 roundedly 2.5 million salt cubes has been produced (HA Handschriften NR. 373.)
[170] Kubinyi 1988, 227–232, Draskóczy 2005, 96–112, Simon 2010, 141–160.

Production declined during the Jagiello era, and revenue from salt fell off drastically. Much of the problem lay in corruption and slovenly chamber administration. A striking illustration of administrative shortcomings is the amount of salt which remained in the Transylvania chambers instead of being carried into the interior or sold locally. This failure was again due to lack of cash. Sometimes chambers were subsidised from other sources of crown revenue.

As more and more salt went on the market in evasion of the chambers, the chamber apparatus found it increasingly difficult to support itself. Not surprisingly, a plan was put forward at the beginning of the sixteenth century to radically reduce the number of chambers. These developments led to the abolition of the salt monopoly in 1521. Trade was freed, and the system of crown salt offices in the interior of the country was dissolved. Some important salt chambers, however (such as Szeged, Satu Mare and Tokaj) remained. They were still needed to organise the river transport which had developed in the Middle Ages.

The abolition of the salt monopoly favoured the inhabitants of towns already involved in trade (such as the mining towns and Debrecen) and the villages around the mines. Nonetheless, the disappearance of the system disrupted supply.

Adding to the difficulties of crown salt administration was its inability to prevent imports. The chambers were not always able to maintain sufficient levels of supply to border areas far from the mines, and Austrian and Polish salt was cheaper than the domestic product. Polish salt had regularly been supplied to what is now northern Slovakia since the late thirteenth century.[171] In Western Hungary, Austrian evaporated salt presented strong competition to Hungarian mined salt. It first appeared in the early fourteenth century, and gained royal approval in the middle of that century. Early attempts at banning imports failed because local inhabitants had little alternative. Account books in Pressburg report sizeable quantities passing through the city in the period between 1444 and 1464. The highest annual figure was 1361.2 tonnes, recorded in 1448. Imports totalled 1119.8 tonnes between 22 April and 22 December 1456 and 936.7 tonnes between 9 May and 13 December 1457. Thereafter, imports went into a steep decline. Considerable quantities also came in via Sopron (a calculation based on figures for 1425 puts the amount of salt passing through the customs post there at 400-800 tonnes). Matthias banned imports in 1464. Towards the end of the fifteenth century, however, salt imports into Western Hungary seem to have risen again. There must also have been some smuggling.[172] In the other direction, Transylvanian salt reached the Balkans and the territory of the Ottoman Empire.[173]

The extraction and trade of this essential commodity created mining towns and provided a living for many townspeople and villagers. The salt business thus contributed to the development of Hungarian towns and the Hungarian economy.[174] The monopolies also had economic benefits. Under good management, it provided a substantial source of revenue for the crown. The chamber establishment also took responsibility for mining operations and for transport and distribution, all of which demanded considerable capital and organisation, not to mention royal authority (in such things as customs disputes).

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[173] Hóvári 1989, Simon 2006.
[174] Kubinyi 1988, passim.

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Medieval imports to Hungary as economic history sources

István Feld

Economic historians have already explored most of the written sources on imports to the medieval Kingdom of Hungary, but none have yet attempted a comprehensive analysis of the still-tangible objects of these imports, the goods themselves. Since the Second World War, medieval archaeologists have brought to light great quantities of foreign-made luxuries and everyday personal objects in Hungary, and subjected finds of several types to – mostly typological – analysis. This mainly applies to items made of metal, glass and pottery, materials which could survive for centuries in the ground and various infill strata. Finds of textiles and other organic-material wares, such as the 14th century Italian silk hangings found in the Royal Palace of Buda[175], are extremely rare. Although many imported objects have been the focus of art history research, there have been hardly any comparative historical investigations aimed at imports as such.

This chapter reviews what is already known about imports, mainly object categories surviving in large quantities and thus attracting deeper research interest, and attempts to recommend future lines of investigation. The discussion reflects the state of research into archaeology, art historical and craft history. Consequently, it will not deal with weapon imports, despite their considerable economic significance, and also leaves out the rare category of bone and antler artefacts, such as the 11th century walrus-tusk crook, probably of Scandinavian origin, found in the Veszprém Valley Convent[176]. For reasons of space, the review will concern only research carried out within the present borders of Hungary.

By way of introduction, we will look at some fundamental issues. First of all, it is not always certain whether the arrival in Hungary of an object made abroad was an economic event at all, i.e. whether it came into the territory of the Kingdom as a classical item of commerce. Many objects at that time may have been made to order or brought in as gifts, or even as plunder. These considerations apply particularly to items in ecclesiastical or aristocratic collections; certainly some the known foreign-made objects made of precious metal and weapons have never been in the ground.

Neither can we always be sure whether an object is foreign at all. It may be a domestic product following foreign patterns or displaying the effects of foreign workshops. This can also be important evidence for international connections, and is related to the question of immigration and settlement of craftsmen and artists linked to specific ethnic groups. In the absence of explicit written sources, it is often not possible to decide beyond doubt whether we are looking at an import or a local imitation. The usual ways of studying medieval material culture and art – the collection and analysis of analogues and art-history style criticism – do not always give a useful basis in this area, and resources for high-cost material tests are scarce[177].

Finally, there has been a tendency for archaeologists and art historians in Hungary to assume that an object's place of manufacture lies close to its findspot if there is no indisputable evidence of foreign origin. This means that they have thought in terms of local production even when this is not the only available interpretation. Domestic crafts still attract much more interest from workers concerned with material culture than imported wares.

Gold and silverware

[175] Nyékhelyi 2003.
[176] Fülöp – Koppány 2004.
[177] Benkő 2005.

The introductory comments apply all the more strongly to objects of precious metals made in goldsmiths' workshops. These traditionally belong to art historians' territory, even though new additions nowadays come almost solely from archaeological discoveries and excavations. The archaeologists who actually find the gold and silverware only rarely publish them, and so subsequent investigations are usually by art historians, or by archaeologists using art history techniques.

One such area has concentrated on analysing objects of court pomp and church liturgy, particularly 11th-12th century items. It is common for these publications to state that the somewhat small number of imported items – Byzantine or Western – were made to royal commission or presented as gifts, and were not objects of economic or commercial history. A good illustration of the limited means of research in past decades is the study of a pearl-studded cloisonné enamel pendant found at the excavation of the Esztergom Royal Palace. This concluded that the pendant may have been Byzantine, but was more probably Byzantine-influenced local work from the late 12th century[178].

Even when art historians have touched on the trade in gold and silverware during the 13th century, they have usually seen it in terms of imports to the royal court, even though European commercial goldsmith centres had definitely been established by that time. Important examples are Hungarian trade with Venice, on which there are written records, and related items of gold and silverware, including some very significant reliquary crosses and female crowns that may be traced to Italy[179].

Even research into the much greater quantities of 14th-15th century objects – liturgical pieces, jewellery, luxurious tableware (cutlery, silver cups and goblets, gilded or gold chalices and tankards)[180] – has not yet explicitly included trade among its primary objectives. In general, art historians researching medieval Hungary have primarily devoted themselves, using their own special style criticism methods, to the determination of local products and their features, at most referring to the influence of imported objects, or pattern-books.

Indeed, the rising domestic demand during this period may already have been largely satisfied by Hungarian-based goldsmiths, whose work relatively well known from the written sources. Nonetheless, a systematic collection of written sources on the import of late medieval gold and silverware – a good example being Éva Kovács's investigations in France on the Matthias Calvary in Esztergom[181] – may be identified as an important line of future research for the assessment of trade in luxury goods. This is considerably helped by detailed catalogues, such as the Hungarian National Museum's liturgical gold and silverware collection catalogue produced by Judit H. Kolba in 2004[182].

Bronze and copper work

The situation is similar for the increasing number of less prestigious (by virtue of the material) bronze and copper products found in recent archaeological excavations. Except for the period up to the 13th century, research into these has in the past been completely dominated by the art-history approach. Some systematic work on late medieval objects has been done recently, however, principally on bells and church fonts, and for some museum catalogues[183].

[178] Kovács 1994.
[179] Kovács 1971. Kovács 1974.
[180] Wetter 2011. Zsámbéki 1983. Holl 2005.
[181] Kovács 1972, 120. Kovács 1998.
[182] Kolba 2004.
[183] Benkő 2002. Benkő 2010. Lovag 1999.

Not surprisingly, the issue of trade has been discussed in connection with processional and altar crosses, cross bases, candlesticks, censers, aquamaniles, and lavabos, rather than the Byzantine or Kievan type of bronze pectoral crosses[184] linked to pilgrimages to the Holy Land. Although previous research has not doubted the significance of the large number of bronze objects of 12th century, mostly of liturgical function, which were brought into the country (in ways that are still largely unknown) from the Rhine-Maas region, Lotharingia, Flanders, Swabia, Magdeburg and Nuremberg[185], it has still primarily been concerned with determining the role of domestic bronze work and deciding which products were made in Hungary. For this, the style criticism method is increasingly being joined by material tests, although there is still considerable emphasis on the effects of foreign precursors and patterns, and on imitation and adoption of form. The limitations of research are indicated by a recent assessment of a cross recently found at an excavation in Balatonfüred[186], displaying parallels with the Esztergom pendant. Byzantium was again identified as the place of manufacture, or the source of influence on a workshop or craftsman in Hungary[187]. A good example of linking findspot with place of manufacture concerns a distinctive group of aquamaniles representing mounted hunters, previously asserted to be of Hungarian origin, but found by more recent studies to be a somewhat more complex problem[188].

There has been somewhat more research into enamel-decorated copper pieces – chiefly cladding and corpuses of wooden crosses, and ciboria, reliquaries and lavabos – from Limoges, France, dated in the main to the 13th century. These are perhaps the most spectacular items in this group and were indisputably manufactured for trade. Having swept cast bronze work off the European market, they were imported into Hungary in large quantities, and domestic imitations further prove their popularity. Research interest arises from their abundance at archaeological sites, even excavations of small village churches. The current historical construction of the function of Limoges ware and the chronology of its importation into Hungary is that these objects required in large quantities to meet the demands of reconstruction after the 1241-1242 Mongol Invasion, but further and more precisely-investigated archaeological finds will probably modify this view. Although this gives us no better insight into the mode and route of imports, we can be sure that the majority of these relatively cheap, largely liturgical, items found their way to Hungary via commercial trade[189].

Late medieval imports from Western and Central Europe also included a "bulk goods" category which has been somewhat less researched. These are (mainly secular) bronze and copper vessels, mortars, candlesticks, chandeliers, metal fittings and "Nuremberg bowls", and survive in much larger quantities. A 15th-century chandelier reconstructed from fragments found in Ozora Castle[190], proved partly by material tests to have come from Nuremberg, shows the potential inherent of this kind of – very plentiful – archaeological material, and points the way forward for future studies.

There are also many objects held in museum collections whose publication could shed light on the volume and economic importance of imports relative to domestic production, and on the question of adoption of form. Comprehensive museum catalogues are an essential complement to the thorough assessment of new archaeological finds. A good example is Zsuzsa Lovag's 1999 work on the medieval bronze items in the Hungarian National Museum, which well reflects the current state of research. It includes a thorough discussion of 12th-13th

[184] Lovag 1971. Lovag 1980.
[185] Lovag 1979. LOVAG 1984.
[186] Valter 1972.
[187] Lovag 1994.
[188] Lovag 1979, 24-26. Benkő 2005.
[189] Kovács 1961. Kovács 1968.
[190] Gere 2003, 60–64.

century, mainly Western European products, but devotes much less attention to late medieval items in the mass-market category which survive in greater quantities[191].

Tinware

The extremely small number of tin products – bowls, plates, pitchers, jugs – which have been found in excavations and often in wells and rivers, or survive in collections, are insufficient to permit a judgement of their role and significance in everyday life in medieval Hungary. There are written sources, however, mainly from the late Middle Ages, and Western European pictorial representations, which indicate quite widespread use, naturally varying between different sections of society.

A comprehensive analysis of medieval tinsmith work in Hungary by Imre Holl, involving a compilation of relics, has taken the study of this distinctive group of products beyond considerations of domestic manufacture alone. He drew attention to data on the substantial import of tin items starting in the mid-15th century and, on the basis of stamps on tin vessels bearing the mark of the maker and the town hallmark (sometimes even the intermediary craftsman), determined products from Hungary, Silesia (Wroclaw, Nysa), Vienna, Salzburg and Nuremberg, most starting in the early 16th century. Rejecting the view that the location of manufacture follows from the findspot, he proposed that tinsmiths in towns throughout Central Europe were, by the late Middle Ages, producing similar products expressly for trade, products which satisfied the largely similar needs of households in each country. These hypotheses will stand or fall on further fortunate archaeological finds, the use of scientific methods, and of course the extension of the study to an international scale[192].

Ironware

Ironware is the largest and perhaps most important category of medieval metalware. Having relatively low artistic status, iron artefacts rarely feature in collections but do turn up in large numbers in excavations, presenting a costly exercise in restoration. As with tin objects, many pieces – especially tools – were observed quite early to bear the stamps of workshops or craftsmen, but these have not yet been subject to systematic research or comprehensively published. The only systematically collected and analysed forgings are *agricultural implements*[193], and there is hardly a single comprehensive publication or appraisal of major archaeological ironware finds[194] in Hungary.

Nonetheless, the importance of iron goods as import products is quite clear from the surviving 15th century *harmincad* ("thirtieth duty") customs registers. By quantity alone, the import of knives and knife blades in numbers approaching a million at Sopron and Pozsony (now Bratislava) shows that in terms of economic importance they far outstripped imports of precious metal-, bronze- or tinware.

Imre Holl was also the first investigator of archaeological finds to realise that the large number of stamped knives from the late medieval village of Sarvaly excavated between 1969 and 1974 were in fact imports[195]. He then devoted a whole study to the late medieval craft specialisations of knife-making, independently-working blade smiths and grinders, and the related trade in semi-finished products. From the maker's mark on the knife blades and often the hallmark based on the coat of arms of the country or town, he identified the knives found

[191] Lovag 1999.
[192] Holl 1987. Holl 1996. Holl 2005, 358–360.
[193] Müller 1982.
[194] Holl-Parádi 1982, 50–86. Gere 2003.
[195] Holl-Parádi 1982, 50–86.

at Sarvaly and many other Hungarian findspots as originating from the town of Steyr in Austria. He also identified products from Vienna and Nuremberg, and thus convincingly proved, in line with written sources, that complete knives and knife-blades were imported into Hungary, and also into Moldavia, on an enormous scale to meet the mass demand for cheap products, and their low prices meant that there was negligible domestic production[196].

It is almost certain that comprehensive studies of other late medieval iron products bearing makers' marks would bear similarly significant results. Many shears and sickles found in Sarvaly have stamp marks, and the same is true for horseshoes from the Cistercian monastery at Pilis, for example. This seems even more general in the case of hoes, axes, hatchets and adzes. This information has not yet been collated or subjected to a large-scale study. More attention also needs to be paid to preserving stamp marks by fast restoration. Most of these items may of course be local products of the substantial Hungarian iron industry, but evidence that at least some were of foreign origin comes from the late 15th century *harmincad* customs register of Sopron. Some – admittedly only a few – of its entries record the import of horseshoes, sickles and axes[197].

Glassware

Glassware has yielded more information on imports than any other area of medieval archaeology. Until the 1970s, only a few fine goblets and cups surviving in collections, many of them originally produced to order, hinted at the significance of glassware in this period, particularly the glassware imported from Italy starting in the second half of the 15th century. Since then, research based on the special method of appraisal and reconstruction developed by Katalin H. Gyürky[198] has to a large extent traced the origin, range of types and chronology of glassware used in medieval Hungary. Some minor assistance in this has come from analysis of written sources, but much more significant is data provided by archaeological finds and the burgeoning research into glassware throughout Europe, followed by comprehensive publication of excavations, particularly the major royal seats[199].

A striking result of recent glass research is that the earliest glass finds – some painted or ground-decoration cups traceable to Byzantine and Middle Eastern cultures and glass lamps and "goitred" bottles from around 1200 – cannot be proved to be commercial imports to Hungary, although the possibility cannot be completely excluded. The literature links most of them with the crusade led by King Andrew II of Hungary[200]. From the mid-13th century, however, there were demonstrable large-scale imports into the major towns in Hungary, and the several hundred glass vessel fragments found in the excavation of a Buda house almost certainly belonged to a merchant's stock. Imports were initially still from Byzantine lands, but increasingly from south and north Italy, and by the end of the century, mostly from the Venetian-held town of Murano, although the issue of origin is not completely closed. Glassware gradually became less of a luxury product. Gyürky considered glassware such as goitre neck bottles, "double cone" bottles (containing brandy, an increasingly popular beverage), prunt glasses, and enamelled cups (many decorated with coats of arms) to have been imported initially by Ishmaelite merchants, and later by merchants from Dubrovnik, although some wares from Germany were brought in by merchants from Regensburg and Vienna[201]

[196] Holl 1994–1995.
[197] Holl 2000, 39–47. Benkő 2010.
[198] H.Gyürky 1982a.
[199] H.Gyürky 1986. H.Gyürky 1991, Mester 1997.
[200] H.Gyürky 1990., H.Gyürky 1991. H.Gyürky 1999.
[201] H.Ggyürky 2003. Holl 2005, 348–350.

By contrast, higher-quality Venetian glassware – which also included mould-blown, scalloped, "optically decorated" and some twisted-thread glasses and wine bottles, and more rarely chalices – supplied in the 14th century the needs of wealthier burghers and nobles in Hungary. Some types were intended specifically for this country[202]. There is also more and more information on the manufacture of glass in Hungary, mostly of plain items like window panes, from the 13th-14th century, involving craftsmen who had migrated from abroad. We also know of Hungarian assistants in Venetian glassworks, and it is also possible that the appellation *Glaser/vitripar* found in written sources from the 14th century onwards does not necessarily mean a local manufacturer. It could refer to the distributor of imported glass[203].

The loss of Italian imports for a short period in the first half of the 15th century was partly made up for by poorer-quality Hungarian imitations of long-established Venetian vessel forms, but at a time when European glassmaking was booming, products of south German and Bohemian centres also appeared, although most of these cannot be definitely identified[204].

The accession of Matthias Corvinus to the Hungarian throne set off the second age of Venetian glassware in Hungary. Hitherto less-popular vessel forms such as goblets and glasses with gilded and painted Renaissance ornamentation, and certain kinds of bowls and jugs, started to appear in royal and aristocratic centres and even in the houses of village nobles. More systematic research is required to determine which of these were imports from Northern and Western Europe, and in what proportions. Additionally, comparison with finds from Hungarian glassworks could positively identify which of them are domestic products, a classification hitherto made only on the criterion of poorer quality. Data on the trade and use of glassware in the late Middle Ages also needs to be gathered systematically. Finally, economic historians would be interested in the extent and role of the medieval glass trade, an issue which could not, however, be satisfactorily addressed in a purely Hungarian context[205].

Pottery

Fired clay objects account for the greatest number of finds in archaeological excavations, and are one of the main means of dating in this field. There is a long history of research into pottery, although in Hungary it gained momentum only after the large-scale excavation of the Royal Palace of Buda in 1945, which yielded an unprecedentedly rich array of pottery shards. This far surpassed the material in collections in terms of both quantity and quality, and included many foreign-made pottery items.

a) Stove tiles

Our look at pottery imports will proceed from the complex to the simple, starting with stove tiles. Through the seminal work by Imre Holl, comprising more than twenty internationally-oriented studies, there is probably more awareness of stove tiles outside the country than any other area of Hungarian medieval archaeology. Also of great importance are the recent catalogues of pottery in the royal seats at Visegrád and Diósgyőr.

One thing made strikingly clear from this rich literature is the poverty of research into stove-tile decorations, even though the earliest occurrence of these in Central Europe is constantly being put back. Stove-tile decorations are the earliest and simplest stove elements, made in a way similar to pots. They appeared in large numbers in the 14th century and later retained the same basic forms. Analysis of changing types and regional differences has mainly

[202] H.Gyürky 1984.
[203] H.Gyürky 1982b, 209. H.Gyürky 1987, 67–68.
[204] H.Gyürky 1989.
[205] H.Gyürky 1974. H.Gyürky 1990, 331–333. Holl 2005, 311–384.

been confined to the rural environment. There are some stove-tile decorations, however, which have long been identified – on the basis of their material and particularly the stamped impressions on them – as Austrian imports[206]. These are attributed particular significance in the spread of basic stove-tile types.

In other cases, researchers for some time tacitly assumed that the findspot coincided with the place of manufacture, and so the analysis of many 14th-15th century tiles, mainly found in royal seats, concluded that they were made in Hungary. Although no pottery workshops were found, this seemed self-evident from the royal coats of arms which frequently adorned Angevin- and Sigismund-era stoves[207]. The exclusively Hungarian origin initially suggested by Imre Holl for the "knight-figure stove" which undoubtedly represented the highest artistic standard during the 15th century – and was linked to the brief (1454-1457) stay in Buda by Ladislas V (Habsburg) – was gradually undermined by increasing numbers of original pieces found outside the Kingdom of Hungary[208]. This Hungarian-centred approach later changed fundamentally, especially in respect of the final third of the 15th century. Imre Holl has now determined many stoves imported into Hungary from the southern area of the German-speaking lands. We are thus now aware of a plain, unglazed Austrian set of tiles, the "Three Kings Stove", probably made in Switzerland; a coloured, mixed-glaze stove, or class of stove tiles, from the Salzburg area; a similar stove that was certainly from Salzburg; and another from Regensburg[209]. Research has also identified stove tile categories originating from Polish lands, although these mostly date from the first third of the 16th century[210].

An important component of Holl's view, elaborated in several publications, is that these stoves, basically second-rank craft products whatever the undoubted artistic value of their decoration (coats of arms, figures and architectonic elements), were usually political symbols and should be identified above all as high-level gifts. He concluded from studies of several imported stoves that they came into the country as gifts for the monarch or his dignitaries, in connection with particular diplomatic-political events. The occurrence of components of the knight's figure stove in Austria can therefore be explained by the fact that the potter also worked for Frederick III Habsburg after the death of Ladislas V. This logic would also explain why, in Bohemia, this type of stove has only been found in castles of nobles loyal to Ladislas V.[211] He therefore does not look on ornate medieval tile stoves as normal commercial products. The types and motifs did not spread from one area to the other by migration of craftsmen, sale of moulds, or copying of existing tiles. Finally, he attributes particular significance to royal workshops which in many cases provided tiles only to dignitaries particularly close to the king, although there is no written evidence for these, and they have not been identified in any other way. Nonetheless, this interpretation could be helpful in more accurately dating the Swiss, south German or Austrian stoves, wherever a category of tiles can be linked to a specific event or person[212].

By contrast, there are written references to normal commercial imports of stove tiles, if not in large quantities. Although the *harmincad* customs register of Pozsony does not give the place of origin of stove tiles that came into the country in 1457/1458, there are records of imports of Austrian stoves in the case of the city of Pozsony and, in the mid-16th century, Eger Castle, and there is similar information about Ónod Castle. It has not yet been possible to make more precise identification at the latter two sites, but Slovakian research has

[206] Holl 1963, 348 and Fig.75. Holl 1974–1975, 135, 143, and Table 50.
[207] Holl 1958. Holl 1971.
[208] Holl 1998a. Tamási 1995.
[209] Holl 1980. Holl 1983. Holl 1998b. Holl 2001.
[210] Holl 2004, 352–375.
[211] Holl1998a.
[212] Holl 1983.

attempted this for the Pozsony case. And in Buda, the simple stove-tile decoration types mentioned above, and grey, distinctive reduction-fired, unglazed tiles, also have Austrian origins[213]. The nature of the latter is somewhat less suggestive of expensive gifts.

Another task for research is to determine when and in what sections of society stove tiles became trading commodities in Hungary. This must have been the case during the 16th century, as tile stoves gained in popularity, although there has been a suggestion that there were workshops supplying only certain noble estates[214]. There is also a need for an international-scale analysis to determine whether stove tiles were indeed confined to a narrow social elite, and whether this follows from the representations of armorial bearings found on them. That would permit an answer to the question of whether this is just a misunderstanding of what was basically a commercial product, so that the classification as prestigious gifts (something like goldsmiths' work) is just an artificial historical construct. This will course require publication of as many archaeological finds as possible, so that we can determine the chronology and spread of each type, and not least their relative proportions.

Vessels

There is a similar need for research on imports of pottery vessels, which basically comprise tableware. Imre Holl has published several reviews of research in this area too.

German stoneware, mainly cups of distinctive decoration and form, appears to have been the most popular pottery imported from Western Europe. It became widespread in the 14th century. One type of stoneware was earlier attributed to Dreihausen, but in the wake of more recent European research is now referred to in the literature as the "Falke group", its place of origin as yet unknown[215]. Recently, Waldenburg pottery has successfully been distinguished as a separate group from Siegburg pottery, both having the same characteristic forms[216]. The highly individual salt-glazed pots from Lostice in Moravia have come to light in great numbers from recent excavations, and been subjected to intensive study in Hungary, mainly directed at determining their influence on domestic pottery[217].

Stoneware was imported mainly because it could not be matched in quality by products of Hungarian potters (who became capable of making stoneware only in the last third of the 15th century), but the extent to which they counted as luxury products remains an open question. Imre Holl is quite definite in claiming that most of them came into the Kingdom of Hungary for the royal court and not as normal commercial products[218]. It is true that there are no known records of their being traded, but the social spread of their users (or market?) is unlikely to coincide with the geographical distribution shown on the published maps, which are unavoidably based on the locations of archaeological excavations

Chinese porcelain, Middle Eastern, Anatolian and Persian faience ware, Spanish "Hispano-Moresque" and early Italian Majolica ware, partly Byzantine in style from the 14th-15th century (mainly bowls and albarellos), are much rarer among medieval finds. In these cases, rarity value itself, besides high quality and artistic finish, could have been an important factor, although several types of ware – above all the characteristically-shaped albarello – could even be classed as "packaging", often being used for storing and transporting spices,

[213] Holl 1998b.
[214] Simon 2000.
[215] Holl 1955. Holl 1990, 210–216. Siklósi 1983.
[216] Holl 2007.
[217] Holl 1955. Holl 1990, 227–239.
[218] Holl 1990, 261–266.

medicines and sweets. Direct trade, therefore, may have had a lesser role for such wares, especially in the early periods[219].

Quite different conclusions offer themselves for late 15th and early 16th century Italian Majolica. As the plates produced in Faenza with the armorial bearings of King Matthias Corvin prove, Majolica ware was frequently produced to order. It is also beyond doubt that many decorative wares came into the country as gifts. Research has distinguished several types of these. We know of albarellos, pitchers and jugs from Faenza and Florence from the closing decades of the 15th century, sgrafitto bowls made around 1500 in Bologna or Padua, and Majolica ware made in the Casa Pirota workshop in Faenza and brought to Buda in the 1520s. It seems probable, although naturally difficult to determine from excavations of royal palaces or aristocratic castles, that at least some Majolica pottery was accessible at town markets – naturally for those who could pay for it![220]

For more ordinary pottery, used also in the kitchen and for storage rather than solely for the table, as well as ceramic casting crucibles used by jewellers and glassmakers, there are written sources attesting to imports, if not on a mass scale. Here again we refer to the Pozsony *harmincad* customs register of 1457-1458. Medieval and early modern archaeologists in Hungary are in almost full agreement that these involve "Austrian" or "Viennese" ceramics[221].

It should be pointed out that imports of special types of Austrian-made stoneware show up in the 11th and 12th centuries. These include the thick-walled, large, high graphite-content vessels (cooking and storage pots), of which a few have yet been found, in some (mostly larger) towns in North Hungary and the Buda area; they were almost certainly brought in by merchants[222]. The terms found in the written sources refer not to these but to largely reduction-fired vessels of characteristic forms which appear in the central and north-western areas of the country from the second half of the 13th century, and a group of graphite-containing, very high-quality (heat resistant!) wares, basically cylindrical-rim cooking pots and wide-mouthed jugs, and to a lesser extent bowls, found increasingly from the 15th century. By virtue of their striking formal parallels, and particularly by the marks on the pot rims, initially cut out but later stamped, these are considered by most workers in this area to be products of pottery workshops in Vienna, Tulln and other Austrian and south German towns[223].

Although there can be no doubt that large quantities of Austrian pottery were imported – the chief evidence being glazed table liquid containers with animal-head spouts and bucket handles[224] – there is increasing argument over the interpretation of these marks in Austrian, and to some extent by Slovakian, research. They may in fact indicate only a prescribed quality rather than the place of manufacture, so that the wares may not be linked to workshops in specific towns. It is therefore possible that a minor, or even a substantial, section of these wares were made in some of the larger towns in the north-west of the medieval Kingdom of Hungary. Some of these may have been the work of German potters who settled because of the urban development in the 13th century and brought with them the pottery traditions of their former homes, although there are no written sources to back this up; others may have been copies of Austrian pottery. The main possibilities are Buda, Pozsony (Bratislava) and Nagyszombat (Trnava), where no pottery products distinctive to the towns and differing from

[219] Holl 2005b. Holl 2007.
[220] Bertalan 1991. Balla and Jékely 2008.
[221] Holl 1955. Holl 1963.
[222] Altmann and Bertalan 1991, Takács 1996.
[223] Holl 1974-1975.
[224] Holl 1966, 16–36.

these groups of vessels have been positively identified from any time before the end of the medieval period. The very widespread occurrence of these wares and their high proportions show up very strongly in finds from the 13th-16th centuries, and are undoubtedly of types which had a major influence on other products of Hungarian potters[225].

Without further fortunate archaeological finds, most importantly of pottery workshops, it would be very useful to carry out a statistical analysis of finds and of the use of graphite, to help decide what kind of economic-history phenomenon is involved. It is certainly unlikely that further research will establish a single clear-cut answer, because even proof of manufacture within Hungary would at most restrict the possibility to some popular vessel types, and not rule it out. Material tests could also be important here, because no graphite workings are known of in the territory of Hungary, although graphite itself may also have been imported. Maps of the distribution of pottery[226] products known as "Austrian" or "Viennese" clearly prove that Danube water transport was important in their trade, and tell us a lot about their market region, a no less important question and one to which research into the history of ceramics in Hungary has as yet devoted little attention. They do not, however, tell us where the pottery was made. What is certain that graphite pottery ware – whether imports or domestic products – remains of considerable significance for historical research in Hungary.

Summary

The discussion, reflecting the state of research in Hungary, no doubt seems disproportionate and incomplete in many respects. This in itself indicates the tasks facing future research. The reader may also feel that the economic role of imports has been exaggerated in some product groups. The concentration on imports was an inevitable consequence of the choice of subject, since it was not possible in every case to compare imported wares with the products of local industry in terms of either quality or quantity. In drawing attention to this small segment of Hungarian medieval economic history, the aim has been to demonstrate the wealth of information inherent in fragmentary remnants of medieval glass and pottery from archaeological sites, the products of craftsmen in Hungary, Germany, Italy or even Spain. It is the kind of information which historians working purely from written sources may be less aware of. The striking fact that analysis of objects to some extent challenges the conclusions drawn from charters must surely be a spur to further work by economic historians and researchers into material culture.

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[225] Holl 2000, 31. Holl 2005, 89–91. Takács 1996, 160, 187.
[226] Holl 1974–1975. Table 54.

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Water management in medieval Hungary

László Ferenczi

In hydrological literature, water management is generally defined as the reconciliation of *water resources* with *water demand*. The concept of medieval water management is somewhat simpler, and may be described in terms of agricultural and urban water management. This effectively divides into four areas of enquiry: (1) water supply for places of habitation, (2) fishing, where it involves managing natural resources, (3) water regulation (flood defence, agricultural irrigation, military-defensive water management, and (4) water as a source of power. Of these, irrigation, fishing and water power merit the most attention by economic historians. The discussion will not deal with water supply or sewage, even though the construction of urban water supplies, for example, were infrastructural developments that could serve as indicators of the towns' economic development, nor with the military significance or economic-history aspects of later medieval hydraulic regulation, apart from some early examples, these being essentially the sphere of research into early modern castle estates and fortifications. Neither is there space to cover the historical hydrological conditions which fundamentally constrained water management, or the methodological difficulties of reconstructing them, although recent research has attempted more accurate reconstruction and understanding of these through the study of historical sources and maps, as well as scientific observations and landscape archaeology data.[227]

Irrigation and river regulation

The earliest historical studies of water management[228] were based on scattered data from charters and saw medieval water regulation as a restricted, local affair compared with what came later, the large-scale water regulation projects in the nineteenth and twentieth century. These studies assumed that material resources and conflicts of title constrained the scale of water regulations, so that the period up to and including the eighteenth century is referred to as the "era of scattered irrigation." From a social historical perspective, the role of foreign settlers – *hospes* – from Western Europe and royal and ecclesiastical (monastic) estates and estate centres has been emphasised, whose importance stemmed from their labour-organisation capacity and central functions, and also their connection with the *hospes*. These early studies also inferred from economic history that flood plains were initially used for fishing, hunting and extensive animal husbandry, and only as agricultural cultivation spread was there a demand for regulation of rivers (monastic estates were probably important here too), especially where accompanied by pressure from natural circumstances (frequent floods, changing river course). This view has been confirmed later by findings from settlement archaeology and archaeozoology that animal breeding was dominant in the eleventh-thirteenth centuries, giving rise to particular patterns of land use and settlement structure, as a major shift to tillage and the restructuring of settlements into nucleated villages took place during the thirteenth and fourteenth centuries.[229] (There is insufficient comparative data to determine whether ecclesiastical and royal estates were different in this respect.)

[227] See for example Kiss 2001.
[228] An overview of the results of late 19th – early 20th century case studies on different regions of Hungary has been presented in Ihrig et al. 1973.
[229] For a brief overview of this issue see: Laszlovszky 2003.

A recent case study concerning the geographically well-defined area of Rábaköz places charter sources in the landscape archaeology context.[230] It addresses some issues concerning water regulation works that have arisen in previous literature (dating and physical extent), and making new findings on their complexity and their reconstructed principles of operation. It argues that the canals identified there comprise a complex system which, in addition to draining and preventing floods, provided fresh water for fisheries and irrigation of fields. These findings have met with some criticism from hydrologists, even though we know of other medieval examples of non-local systems (i.e. not tied to single estates) in Western Europe.[231] Since archaeological finds in these drains do not always permit the determination of their age or use, – because continuously-used canals were sometimes dredged, thus denying archaeologists of the usual stratigraphic base –, Takács inferred their medieval origin from the topographical match between the extensive network of surface traces with perambulations during the Arpadian age (eleventh-thirteenth century). Perambulations are vital sources, mentioning the drains as landmarks. Other than these, only a few scattered sources specifically mention irrigation, and mostly if it was the cause of some legal conflict between neighbouring landowners, such as the flooding of the other person's land; there are some such records from the fifteenth century, proving that irrigation was still in progress, at least to a modest, local extent. Another potential foothold on the chronology is a condition Takács has put forward as essential for such an extensive and complex system to take shape, a coordinating organisation. He identified the hierarchically organized population of the royal estates (i.e. *comes, comes curialis, centuriones, decuriones,* and the servant folk) as forming the social basis for such extensive water regulation works between the eleventh and thirteenth centuries. His observations and this hypothesis led him to the conclusion that as the social-structural conditions responsible for the creation and maintenance of the water regulation works changed, the canals fell out of use and gradually deteriorated during the fourteenth and fifteenth centuries.

The combined study and topographical analysis of field observations, cartographic data and medieval perambulation records may reveal the possibility of medieval irrigation and drainage systems in other regions. One of these could be Syrmia, famous for its vineyards and orchards. Unfortunately, the topographical data preserved in local perambulation records has a very uneven distribution, with large chronological and topographical gaps. None, for example, mention the large drains known from narrative sources to have been built in the Roman Era. Thus, the possibility that Roman drainage systems stayed in use through later periods cannot be ruled out, as topographical data is not detailed enough for identifying observable landscape features. Such limitations could be made up for by systematically gathering archaeological topographical data from earlier, pre-medieval, potentially Roman-era, sites, and from late medieval sources too, and by involving scientific methods of investigation, such as environmental reconstruction. Most recently, phytolith analysis of samples from boreholes drilled at several points on the Rábaköz drainage system has yielded evidence of regular maintenance, although chronological issues have not been clarified yet.[232]

The diverse functions of these drainage systems – flood drainage, irrigation – can be linked to a system of water management based on *fok*s, canals which led water from the river channel levels through the flood plains of large meandering rivers (Danube, Tisza, Dráva). Much is known of these from historical hydrological toponyms, maps and 18th-19th century documents, and in a few cases also from medieval charters. These sources usually mention the

[230] Takács 2003.
[231] Bond 2007, Brown 2005, Glick and Kirchner 2000.
[232] Persaits et al. 2010.

land features *ostium* and *brachium*, partially artificially-maintained natural breaks in the river's natural levees through which flood water entered the flood plain, filling it from bottom to top, and then flowed out when the river receded. As well as taming the destructive power of the floods, the *fok*s were used to maintain oxbow lakes used as fisheries, and also facilitated irrigation of neighbouring pasture and fields.[233] As with the drainage systems, there is a dispute as to how the inlets were actually used to regulate the water, whether they were originally natural or artificial, the extent of artificial intervention, and what their function exactly was.[234]

Fishing

Although fishing must have had a significant economic and nutritional role (as may be inferred, for instance, from the several contemporary narrative sources attesting to the country's richly endowment with fish and game), it is difficult to determine the economic role of fishponds and river fisheries. There are only a few documents with relevant data, from different localities, and they form a sample too small to draw general conclusions. Most of what we have are early sixteenth century financial accounts, giving some topographically haphazard information on expenses and income. There are some fortunate cases where account books for several consecutive years give a fuller picture, but only fisheries that provided more significant incomes have left us with records of this kind. For instance, the fish weirs, i.e. fish traps of river fisheries, called *szégye*, where the catch was mostly sturgeon, the most expensive fish. Accounts for the *szégye* fisheries in the neighbouring villages of Gúta and Naszvad on the Danube (Duna), owned by the Archbishopric of Esztergom, record the numbers of sturgeon caught the late sixteenth century (1578, 1581, 1594).[235] These averaged 150-160 a year, and the fish fetched 6-8 florins each. The accounts also record the name of the customers, who included baronial families, tenant peasants of nearby market towns, burghers of the royal town of Pozsony (Bratislava, Slovakia), and agents of the imperial court in Vienna. The latter regularly bought large quantities, up to 50-60 at a time.

Another rarity is the chance to assess the economic role of fishing lakes within a single estate. According to the accounts of the Ónod estate beside the Tisza, fishing provided the very considerable income of 40-50 florins a year, commensurate with the sums brought in from the right to levy customs duty on through-traffic. Fishing on mortlakes on estate villages involved a kind of seine net, the *gyalom*, and on the Tisza, the fixed fish weirs, the *szégye*.[236] The lords were generally due half or a quarter of the income of the fishponds (usually collected from the fishermen in money, more rarely in kind), and could also charge for the use of gear (*szégye* and boats). The accounts also record the expenses set against income from customs duty and lake fisheries. These are very diverse, mostly food (even purchase of fish!), but also salt, used

[233] Andrásfalvy 1989.

[234] Different viewpoints – primarily based on the works of Bertalan Andrásfalvy, Zsigmond Károlyi, Woldemár Lászlóffy and Antal András Deák – have been recently summarised in Fodor 2001. For the application of geomorphological and pedological methods in identifying the system of *fok*s: Lóczy 2007. Methods based on geomorphological criteria to identify artifical water channels have been discussed more extensively by Rhodes 2007.

[235] Takáts 1897.

[236] Data on fisheries and fishing can be found in several accounts concerning different estates of the castle of Ónod: Magyar Országos Levéltár - Diplomatikai Levéltár [hungarian National Archive – Collection of Diplomatics (Henceforth: MOL DL-DF)] 26183 (1517); 26194 (1518); 26197 (1519); 26204 (1519); 26206 (1519); 26212 (1519); 26228 (1520) References on purchasing different types of fish can be found also in other accounts, concerning customs duty. These accounts have been extensively discussed by Iványi 1906.

to preserve the fish they caught.[237] The keepers of these accounts bought commercially-available fish, species mentioned in other sources of the time and probably the most popular, including carp, sterlet (*Acipenser ruthenus*), sturgeon (*Acipenser huso*), burbot (*Lota lota*), European wels (*Silurus glanis L.*). They were bought mostly from the local fishermen, but sometimes from the Pauline friary of Sajólád,[238] which neighboured the estate. On one occasion sea fish (herring) was also purchased, but this might have been more of an exception, since it was noted that no other fish was available.[239] Herring, caught at the Baltic Sea, and traded by Hanseatic towns, must have came into the country from Poland along the trade route through Kassa (Košice, Slovakia). It is interesting that excavation of wells in the nearby market town of Muhi has turned up some barrel linings made of wood from Polish-German territory, dated to the fourteenth century. These were almost certainly originally used to transport herring.

Urbaria[240] and chapter registers[241] may also provide useful data on incomes, although less systematically than account books. Chapter registers include entries on the redistribution of income among members from year to year, and some of these concern fishponds, lakes, but this usually tells us little about their management. These sources are all related to large secular or ecclesiastical estates, but there is also much to be learned from charters involving individual cases, such as contracts of sale or records of damages taken after acts of might. The damages entered on these are often as much as 100-200 florins, which means, that the income taken as a lump sum from fishing on one lake could equal the annual landowner's census income from a minor market town. Although we have no overall data for either the kingdom or any region, it seems fishing lakes were established quite regularly during the fourteenth and fifteenth centuries. The payback time on building a fishpond could be as little as a year or two, although the construction costs varied according to the natural conditions and individual requirements. The initial choice of site for a pond had to be made very carefully to ensure it could be kept and maintained economically. On the other hand, maintenance costs – unlike those of mills, with their complex mechanism – were usually negligible, the work mostly being assigned to tenant peasants (or sometimes a lake caretaker was appointed), so that money only had to be spent on purchasing or making fishing tackle and other equipment.

Distinctions among types of fishponds appear very rarely in documents, one case being the oxbow lakes, referred to by the word still current in Hungarian, *morotva* (*piscina seu morotva*), maintained by the *fok* canal system. Sometimes the proper names themselves are indicative of artificial or natural origin, e.g. *Kengyel*, where the name refers to the curved shape typical of oxbow lakes, or *Asvanyto*, which occurs quite often, and clearly denotes an artificial pond. Some Western European sources make the functional distinction of lakes for breeding and keeping fish (*vivarium* and *servatorium*),[242] but in Hungarian sources the small artificial ponds for keeping fish and large flood-plain lakes for breeding fish could be both referred to as *vivarium*.[243] It was probably only in the later medieval period that the word

[237] MOL DL 26169 (1516), see also Iványi 1906, 14. and MOL DL 26204 (1519).
[238] MOL DL 26193 (1518).
[239] Mentioned by Iványi 1906, 27. See MOL DL 26193 (1518)
[240] For example: Kredics and Solymosi 1993.
[241] E.g. Solymosi 2002.
[242] Aston 1988.
[243] The *vivarium* may appear as a constructed pond: MOL DL 36400 (1524): „unum *vivarium* sive *piscinulam ad conservationem piscium* construi fecit". However, in the donation charter (1138) of the Benedictine priory of Dömös it appears to be of natural origin: „*Iuxta villam Tapai est vivarium, quod dicitur Citei/Etei, in quo vivario tertiam partem debent habere cives Cerugdienses, si claudere voluerint cum Demesiensibus exitus et reditus*

vivarium came to mean a certain type of fishpond (for breeding or storage) – a more systematic study of the use of this term could be very useful. By all means, the flood-plain fishing lakes regulated by the *fok*s were suitable for both keeping and breeding fish, and where necessary there were other ponds for storing it.

Documents refer to the fishponds and lakes more usually as being large or small (*magna* or *parva*). This may be more informative than first appears, because according to István Werbőczy's *Tripartitum*, the size is not just a denotation, it is a possible criterion for valuation and type classification. A pond's value depended on its size and whether it periodically dried or had a permanent water supply.[244] Werbőczy's typology most probably goes back to a book which enjoyed popularity as a manual of economics in the fourteenth and fifteenth centuries, the *Ruralia Commoda.*[245] It was written by the thirteenth century scientific scholar Petrus de Crescentiis, who also distinguishes "large" and "small" fishponds, and divides them further according to whether or not they have a permanent water supply. Small artificial fishponds, as described in the book, had to be completely built around with stones, branches or wood to protect them from the ravages of predators like otters, and their bed had to be dug as deep as possible. Small ponds that were constantly refreshed were suitable for *cavidanii*, *scardinae*, and *barbii* – i.e. chub (*Squalius cephalis*), rudd (*Scardinius erythropthalmus*), and barbel (*Barbus barbus*) – and other small fish, and even for trout, whereas those which had no water inflow or were marshy because of the clay soil, were better suited to tench, eels and several other small fish. Large fishponds on wet, marshy land were home to all kinds of fish, but on smaller lakes there were some kinds of fish it was inadvisable to keep, like pike (Esox Lucius), which ate up the smaller fish. The difference between these fishponds and lakes derived from the methods of fishing and thus the potential revenue, because methods like weirs or large seine nets were only feasible on larger lakes and rivers.

The systematic study of documents is not the only source of information: topographical research and landscape archaeology can also tell us about fishponds. In some cases (e.g. small ecclesiastical or secular estates), these methods provide the only data, as there are no written sources, or very few.[246] Formal and typological classifications from field observations can distinguish, for instance, all-purpose and special-function fishponds.[247] The latter include systems of multiple ponds which, according to sixteenth and seventeenth century fishing literature, served to separate younger and older fish, and to drain water from the pond beds and periodically dry them out. Typically, these involved a system of stepped weirs across a valley, and traces of them are still perceptible on several – mainly ecclesiastical – estates. Another special type are those small fishponds, which also involve a dam across a valley, and can be found characteristically beside Pauline friaries. These were presumably too small for breeding, and must have been used for storing fish and for storing and supplying water.

Water energy – mills

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faucis vivarii; si claudere noluerint nullam partem habebit." See: *Fejér, Georgius*: Codex diplomaticus Hungariae ecclesiasticus ac civilis. Budae, 1829. IV. 103. p.

[244] See Bak et at. 2005. The relevant parts are: Part I.,Chap.133.,§40. : „Item piscina effluens, et non deficiens ad m(arcam) 10. Non effluens autem, et tempore siccatis deficiens ad m(arcam) 5." 41.§: „ Piscina magna cum clausura existens *Gyalmos-tó*, vel etiam *Moró-tova* dicta, necnon alia piscatura Danubialis vel Thicalis, sive Szava aut Dravae, *Thanya* nuncupata, si habet deputantum proventum annalem; decies tantum aestimatur, quantum facit eius proventus annualis. Si vero computatum proventum non habet (prout nos generaliter utimur) aestimatur ad m(arcam) 50."

[245] See Richter and Richter-Bergmeier 1998. Chapter 81, *De piscinis et piscibus includendis*.

[246] E.g. Belényesy 2004.

[247] Aston 1988. See also the other studies in the same volume.

Literature on the harnessing of water energy is chiefly concerned with dating the appearance of vertical water-wheel mills, determining the extent of their use, assessing their efficiency and power, estimating the revenue they provided, and establishing their numbers and geographical distribution. Studies in engineering history originally considered the vertical-wheel mill to have appeared in Hungary in the twelfth century, casting doubt on the authenticity of some earlier charters, but the early eleventh century is now widely accepted. Economic historians clearly link it to the system of management and organisation developed on the large estates of the Benedictine order and the bishoprics.[248] László Makkai has drawn on Western European parallels to highlight the role of these ecclesiastical estates which formed in the eleventh and twelfth centuries, and explained the increasing number of mills as a response to the demands of these estates as they grew in size.[249] A similar phenomenon, however, is perceptible in small estates of the time, as an economic history study of northern France in the eleventh-thirteenth centuries has pointed out, and this may be explained through the competition of local estates.[250] Thirteenth century charters record the first industrial applications of mills,[251] and show water mills as being in use in more and more counties throughout the country. The increasing number of references may not be an utterly reliable reflection of the spread of technical innovation, however, since this was a period when charters started to be granted by places of authentication, and many more were granted.[252]

The efficiency of milling and the throughput of mills (primarily the province of engineering historians) have been also addressed by L. Makkai. Using eleventh century sources from England and Hungary, he showed that the capacity of mills did not diverge from the European average: one mill could supply about 250 people, or 30-40 families.[253] This estimate was based on censuses which included the numbers of both families and mills, and it was assumed that the capacity of mills was even, that estates were self-supporting and the mills did not produce surpluses. Such an argument would be highly problematic from the perspective of the fourteenth and fifteenth century, due to changing economic conditions (the rising significance of trading goods, and monetary transactions), furthermore, the earliest accounts and registers are from this period, and they also give a number of details on milling and mill capacity, which underline problems of making such general calculations. Although, there are no regular lists of income covering periods longer than a few years, these sources usually record the annual throughput (some accounts only give the quantities of grain without calculating the income-prices), but most of them are silent on, or only occasionally mention other influencing factors, such as the type of mill (undershot, overshot, ship mills), the number of mill wheels or millstones, the type of grain, the type of flour, the current cereal – which was subject to regional variations – and whether the mill was operating to its full capacity. Taken together, these factors are an obstacle to evaluating the sparse and local data on capacity and income, and to drawing general conclusions on how milling capacity improved with time and became economically more important.

The Ónod estate is but an exceptionally well documented case, where – according to the accounts – the mills ground 50, 150 and 300 *cubulus* of grain in 1516, 1518, 1519

[248] For a recent historiographical overview, and a detailed discussion of 11-13th century data see Vajda 2005.
[249] Makkai 1974.
[250] Van der Beek 2010. Most probably a similar process is documented in the middle of the thirteenth century in the Rábaköz region, where the number of mills had grown rapidly, so that some of them were already unsustainable, and eventually the palatine ordered them to be destroyed. Cf. MOL DL 317 (1247-00-00)
[251] Heckenast 1965.
[252] In connection to this issue see Kőfalvi 2002, or Solymosi 2008.
[253] Makkai 1995.

respectively, on which the income was between 15 and 90 florins.[254] These figures show that mills were probably a little more modest source of income than fishponds. An estate with several mills did not necessarily collect more than 100 florins a year from them.[255] István Kenyeres's study also gives examples of the income derived from mills on secular estates. Depending on what other sources of income an estate had, mills accounted for a highly variable proportion of the total. The same was, of course, also true for ecclesiastical estates (bishopric, chapter, monastic). Erik Fügedi has shown from fifteenth century account books that the Archbishop of Esztergom had an average annual income of 10 florins per mill, a total of 140-170 florins, a very modest proportion of his annual total of more than 10,000 florins.[256] Mills may have accounted for higher proportions on monastic and chapter estates and bishoprics with lower annual incomes, but there are only a few scattered records to demonstrate this. For example, in 1356, the Cistercian monastery of Pilis derived an income of only 40 florins from the wine tithe and the mills, out of a total income of 700 florins.[257] The expenses stated against the income from the Ónod mills shows that these figures were far from pure profit; and the same conclusion may be drawn from the 1524 *urbarium* of the Bishopric of Veszprém, where bailiffs were paid out of the income.[258] The owner of a mill let to a tenant would in any case only receive a certain part of the income.[259] Mills also ate up much more of their income on maintenance than fishponds: expenditure was required to replace worn millstones, iron fittings and tools, and repairing timberwork and dams.[260]

Nonetheless, mill leases and income records from the late sixteenth century show the effects of the agricultural economic upturn: as cereal prices rose, so did the income from mills. Compared with the price of 1 florin for 3-4 *cubulus*[261] of wheat in the fourteenth and fifteenth centuries, account books for the mills of the town of Kolozsvár (Cluj, Romania),[262] and those for the Archbishop of Esztergom's mills in Körmöcbánya (Kremnica, Slovakia) in the 1580s and 1590s[263] show 1 *cubulus* of wheat being sold for 1-3 florins. It was probably mainly urban mills that profited from this situation, because they usually had a greater capacity, and more wheels, and generated more income. The Kolozsvár and Körmöcbánya mills had annual incomes of between 200 and 500 florins.

With the general economic development the overall number of mills probably rose, as new mills could have been established. Using eighteenth century statistical data, Zs. Károlyi, estimated of the number of mills in medieval Hungary at between 5000 and 6000. Whether this was considered as being true for the sixteenth or the fifteenth century (or even the earlier period), was not specified, however, without a systematic collection of medieval charter data,

[254] The accounts of the mill at Ónod: MOL DL 26172 (1516), és DL 26203 (1519), DL 26214 (1519). The accounts of the mill at Bölcs: DL 26186 (1518) and DL 26213 (1519).
[255] See e.g. Holub 1963, 51. There is mentioning here of the Alsólendva estate of the Bánffy family, where the incomes from mills amounted to only 71 florins in the early years of the 16th century.
[256] Fügedi 1960.
[257] Hervay 1984, 144. The biggest part of the income (400 florins) came from custom duties.
[258] See Holub 1943, and Holub 1963.
[259] Either administered in money, or in kind, this ratio may largely vary, but it is usually one third. See e.g. Holub 1963, 50.
[260] Such data are mentioned by Holub 1963, 48, and Iványi 1906, 20. See also in Iványi 1918.
[261] The exact size of these cubic measures, as well as their ratio are problematic to establish, due to terminological diversity in different regions, and the scattered data. According to Bogdán 1991, a *cubulus* grain is about 50-90 kg, and a *metreta* is 40 kg. However, the *metreta* also appears as a synonim of the *quartalia*, i.e. one quarter of a cubulus. It is also confusing, that measures may frequently appear in the sources under their vernacular name.
[262] Novák 2001.
[263] Acsády 1895.

it is difficult to verify. The most interesting problem arises in determining regional differences among ecclesiastical and secular estates, as well as fluctuations in mill numbers.[264]

Estimates for the eleventh-thirteenth centuries would be highly problematic as data from charters is sparse, giving a very fragmented picture without much representative value. The large ecclesiastical estates, especially those in Transdanubia – the Benedictine Abbeys of Pannonhalma and Tihany, and the Bishopric of Veszprém – are the best documented, where mills are mentioned as early as the eleventh and twelfth centuries in charters granting or confirming donations. However, the mills located within the monastic precincts, which sometimes had specialised industrial functions, are almost never mentioned and are only known from excavations.[265] The variation in means, size of estate and cultivation preferences among different monastic orders and different chapters shows up in diverging numbers and locations of mills. For instance, larger Cistercian estates – granted by the king – usually had no more than about five to ten other mills,[266] and smaller ones had even less. The largest and most prestigious Benedictine house, Pannonhalma, had twenty or thirty, and this set it well apart from other houses of the order. The priory of Csorna (whose significance among Premonstratensian houses can be compared to that of Pannonhalma among the Benedictines) also stands out for the number of its mills – between 15 and 17. This was no doubt because the estate specialised in the production of grain, which it even transported to Vienna on its own Danube ship. The smaller mendicant-order friaries usually had fewer mills, but still looked to them as a major source of income. In general, Dominican and Franciscan orders, which mostly established themselves in towns, were less inclined to set up fishponds and mills than the Paulines. Apparently, the site selection of Pauline monasteries was more suited to the heremitic ideals, and economic activities enabling self sustenance, although even they derived substantial income from tenants of mills they acquired in nearby market towns.[267] Matching the demands of higher local populations with the opportunity for landlords to increase their income, these urban properties were identified by friaries as a good investment.

We have a better appreciation of the management of great estates of secular lords in the fifteenth and sixteenth centuries because registers, accounts and *urbaria* survive from this period. Ferenc Maksay argued that mill numbers are a good indicator of the rising prosperity of landowners' manors, which were expanding at that time.[268] On the Rohonc-Szalónaki (Rechnitz-Schlaining, Austria) domain,[269] for example, 20-25 out of 40 villages had mills. The number of mills increased in the second half of the sixteenth century and fell back in the early 17th century, almost certainly because of the Ottoman-Habsburg "Long War" (1593-1606). The increase in the number of mill wheels, however, meant that the overall level of output was probably maintained. This again raises questions about mill output, demonstrating that the amount of income from mills was not necessarily in proportion to the documented number of mills. Thus, if only mill numbers are known from *urbaria*, and no account books or income figures are available, it is problematic to support Maksay's conclusion, Another example is the 27-village estate of Gyula,[270] where there were 12-14 mills in operation in the 1520s. In subsequent decades, there was an increase in the number of mills, too, but to a lesser

[264] An exemplary study on this issue is presented by Langdon 1991. See also Langdon 2004.
[265] *Gerevich 1977.*
[266] Ferenczi 2006. The case study also demonstrates the close topographical relation between central places and mill sites.
[267] Belényesy, 2004. Romhányi 2010.
[268] Maksay 1959.
[269] For a brief introduction to its history see Zimányi, 1992.
[270] Kiss 1978.

extent. Given the position of the estate on the frontiers of occupied territory, it must have been more seriously affected by military action during the sixteenth century.

In practice, then, changes in the number of mills do not necessarily signal economic growth or tell us the volume of manorial activity. Thus even when general economic trends (agricultural development, and the rise of the manorial serf-economy) would suggest that the significance of the milling industry was increasing, assessment and evaluation of differences between the development of one estate and another is complicated by divergent natural endowments and various political, social and economic factors. Landlords could lease out their mills to tenants, and the construction of new mills could have been a joint effort, sharing risks and costs, so that the increasing productivity of estate manors should not be interpreted as a straightforward intention of landlords to increase their manorial income. Mill tenants (wealthy peasants and townsfolk) could also benefit from the economic opportunity opened up by rising market demand. However, mill rents of course inflated together with grain prices: annual rents were often, indeed customarily, recorded as 1 florin a year in the fourteenth and fifteenth centuries (discounting other conditions and services), but went up to 3, 6 or even 8 florins in the sixteenth and seventeenth centuries, although some instances of exceptionally high rents can be found at any time.

Topographical studies of mills and fishponds can also fill in some gaps in our knowledge of the settlement hierarchy of a single estate or region, since the geographical distribution of mills could be related to estate centres, manors, villages of sizeable population, and market towns. From a topographical point of view, the mill beside the castle at the centre of the large secular estate, like the mill beside the monastery, was an almost ubiquitous feature. An impressive, if exceptional, example was Tata Castle, a favoured royal residence in the fifteenth century: Antonio Bonfini, King Matthias's court historian, noted that it had no less than nine mills. The complex hydraulic system constructed between 1412 and 1424 probably made use of a fishpond and some mills originally established by the Benedictine Abbey in Tata. The drainage system was linked with the castle moat, supplying it with water. The moat was also used to store Danube sturgeon purchased for the royal court and proudly shown off to guests by King Matthias himself. Mills near castles must have taken on greater importance in the sixteenth century, when the military-strategic role of such forts increased: as well as grinding grain, the mills had to serve as forges and gunpowder mills. During the fourteenth and fifteenth centuries, more and more mills appeared in the expanding market towns. Where there were also favourable natural features, such as thermal springs, mills were built in considerable numbers. Along a 15 km stretch of the River Tapolca, for example, in the market town of Pápa and its neighbouring villages, there were 15-20 mills in the fifteenth and sixteenth centuries.[271] The hydrological resources in the vicinity of the royal seat of Buda – Alhévíz, Felhévíz and Óbuda – were taken advantage of by several ecclesiastical bodies, including the Hospitallers' convent in Óbuda, the Franciscan nuns of Óbuda, the Cistercian abbey of Pilis and the Premonstratensians of Margit Island, as well as the burghers of Óbuda.[272] The attempts by municipal authorities of developing Western European towns – particularly wealthy trading towns with territorial authority – to redeem water-use rights and buy up mills in the thirteenth century (water use was subject to- *regale*, i.e. the pre-emptive right of kings), had no echo in Hungary, where town councils did not seem to have comparable territorial influence. The ownership of mills in the vicinity of towns was usually mixed, but in the case of archepiscopal seats and chapter houses, there was, indeed, a perceptible policy of acquiring and letting out as many mills as possible.

[271] Kubinyi, 1994.
[272] For a detailed topographical analysis see Kubinyi 1964.

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Figures:

1. Hydrological map of the Carpathian Basin before flood regulation. (Geographical names and towns mentioned the text: 1. Rábaköz, 2. Syrmia, 3. Gúta, 4. Naszvad, 5. Ónod, 6. Muhi, 7. Kassa, 8. Alsólendva, 9. Pilis, 10. Csorna, 11. Kolozsvár, 12. Körmöcbánya, 13. Rohonc-Szalónak domain, 14. Gyula domain, 15. Tata, 16. Pápa)
2. Channel system reconstruction (after Károly Takács)
3. Traces of the stepped fishpond system near Ákospalotája, the summer residence of the Archbishop of Esztergom. The ponds belonged to the game park. (Fifteenth century)

Coinage and financial administration (1387-1526)

Márton Gyöngyössy

This chapter is an overview of the monetary history of the "long fifteenth century". The subject divides into six main areas. For some of these, the discussion is traced back to the previous period in order to get a proper understanding of developments. The level of detail also varies, and is lower in areas where there has been relatively little research, such as the circulation of money. Indeed, some questions have been almost entirely neglected in the modern literature. The discussion relies on the same kinds of sources as Csaba Tóth's chapter on the monetary history of the previous period, i.e. a combination of numismatic studies and monetary history findings derived from written sources.

The mint chamber system

Starting in the reign of Charles Robert (1308-1342), the person in effective charge of the kingdom's finances was the *magister tavernicorum*, who had control of crown property and headed financial administration (minting, salt and customs administration). As Bálint Hóman put it: "all the lines of control of the chamber ran to the *magister tavernicorum*, the highest central authority of royal financial administration. As an administrator, the *magister tavernicorum* had a network of officials who kept control of all the chambers. He also held full legal jurisdiction over everyone in his employ." His judicial powers also extended to the royal free towns and the Jews living in the country.[273]

Indeed so far did the functions of the *magister tavernicorum* expand in politics, administration and the judiciary that a new office had to be established to manage the food tax revenues, control the royal treasury and take charge of minor affairs involving financial administration officials. This was the treasurer, an office which was initially subordinate to the *magister tavernicorum* but became increasingly important its own right during the fourteenth century; by the fifteenth, the treasurer had become the sole head of royal financial administration.[274]

Charles Robert merged the mint and mining chambers in the mining regions to form a coherent system. This solved the problems of supplying precious metal to the mints in each mining region. After 1338, the chamber count in each mining chamber seat directed the combined mint and mining chamber. The chambers were leased to chamber counts contracted to the king under private law, and directly accountable to the monarch. The lease had a term of two years, which usually starting from the Feast of the Purification (2 February), and sometimes from the Feast of the Annunciation (25 March). From 1336, the lease stipulated that a chamber tenant who fulfilled his duties properly should have the right to extend his lease to the following year. The lease afforded on the chamber count "the enjoyment of the income from changing money, the portal tax which replaced the compulsory renewal of money (*lucrum*), the precious metal ore monopoly and the *urbura*." (Bálint Hóman) As the head of the combined mint and mining chamber, the chamber count had an array of duties. He supervised the working of the mines, was responsible for collecting the *urbura*, and held jurisdiction over mining affairs. He was responsible for the working of the mint, for redeeming precious metal under the chamber monopoly, for refining the metal, and for minting coins. The mints (of which there were several in the territory of some chambers) operated under the chamber count's direct supervision, as did the ore refining and assaying workshops in the mining towns. He also

[273] Hóman 1921, 40–45, 87, 193, 231, 245–250.
[274] Kubinyi 1957, 25. Kubinyi 1980, 11–12. Kubinyi 1981.

performed some tax administration functions, collecting the portal tax and the tax imposed on towns in lieu of chamber's profit. His duties were therefore complex, mixing official administration with the rights and powers of commercial production. He bore full liability for all official actions of chamber staff and held full administrative and judicial powers over those accountable to him. This meant that he had sole right to judge their legal disputes, although either party could appeal to the *magister tavernicorum*.[275]

The *magister tavernicorum* and the Archbishop of Esztergom sent representatives to inspect the chamber count, and to be present for the opening of the chest – locked with three keys and closed by the seals of these dignitaries – in which the minting dies and metal bars were kept. They also had to be personally present when the silver was cast and the coins struck, and every week they had to check the fineness and weight of the minted coins. Their authority extended to every area of chamber administration and chamber works. Their pay had to be provided by the chamber count, and they also laid claim to a third of fines and penalties. These representative were usually chosen from the landowning class.[276]

The combined financial administration led by the *magister tavernicorum* was abolished in the mid-fourteenth century and "replaced… by persons in direct contact with the monarch and managing each branch of royal revenue as tenants or officials" (András Kubinyi). The powers of the mint-chamber counts also changed in the 1370s. They lost their tax collection powers, which passed to the newly-created offices of chamber's profit counts (whose territory was coterminous with that of the mint-chamber counts). In regions where there was no mining, the loss of the chamber's profit eventually led to the withering away of the office of chamber count, because of the difficulty of obtaining the requisite precious metal. The administrative separation of chamber's profit from minting did not take place until the reign of Sigismund of Luxemburg (1387-1437), although the first certain information dates from exactly 1387.[277]

Although the sources usually mention chamber counts only by their title (*comes camerarum*), omitting the name of their chambers, it is reasonable to assume that the old system persisted, but minting was from time to time concentrated in the hands of a national chamber count. This probably favoured foreign-based tenants, who thereby gained influence over minting and precious metal extraction throughout the kingdom. The chamber counts mentioned in written sources between 1387 and 1487 were all foreign. Although we do not know the rate of profit enjoyed by chamber tenants, they were clearly in continual receipt of – and could sell – enormous quantities of precious metal. Consequently, it was common for the tenant named in a chamber lease to be, in reality, an agent or member of a foreign group of financiers. In the years where there are records of a national chamber count, it is striking that only *urbura* counts are mentioned in local seats. At these times, the duties of the mining chamber probably separated from those of the mint chamber, and the latter similarly passed into the hands of a single person in the kingdom.[278]

Minting operated efficiently under the lease system, requiring and only fine tuning through the means of control. An illustration of this can be found in *propositiones* for the royal council, drafted sometime between 1415 and 1417. The person appointed as guard of the mint, according to the proposal, was to be a wealthy nobleman; his duties would be to receive weekly proofs of coins, keep the proofs under seal, and – together with officials of the archbishop of Esztergom and the king – examine the coins struck during the year.

[275] Hóman 1921, 197–224. Tóth 1999, 307–308.
[276] Hóman 1921, 225–228. Gyöngyössy 2003a.
[277] Kubinyi 1980. Kubinyi 1981.
[278] Gyöngyössy 2003b, 13–14.

This proposal departed from the system introduced by Charles Robert inasmuch that the new official would have sole responsibility for control of the mints, taking over from the *magister tavernicorum*'s deputy and the *pisetarius*, an official of the Archbishop of Esztergom. In fact, fifteenth-century laws normally assigned control of the mints to the *magister tavernicorum*'s men, although András Kubinyi seems to have been correct in stating that the chief controller appointed by the king may have received the remuneration, but it was it was the local town councils, via their own appointees, which actually inspected the mints.[279]

Florin outflow and foreign trade

The role of the gold florin in Hungarian medieval finances has become the most hotly disputed issue in the economic history of the period. One position, based on findings by Ferenc Kováts and Oszkár Paulinyi from their study of mid-fifteenth century Pressburg customs registers, is that Hungary ran a foreign trade deficit. Medieval Hungary obtained a large part of its manufactures and textiles through Western imports, a fact clearly reflected in the customs registers. Entries for trade in the opposite direction, however, seem to suggest that Hungarian exports were insufficient to balance these imports. By extrapolating the figures to the kingdom as a whole, Kováts and Paulinyi calculated an annual deficit of 300,000 florins. This became the basis of their "rich land – poor country" theory: the medieval foreign trade deficit was covered by precious metal extraction and high-standard Hungarian florins.

There are several flaws in this theory. Imports mainly comprised manufactures (broadcloth, spices, etc.), which Hungary attempted to counterbalance by the export of livestock, wine and copper. The country's industry was not developing satisfactorily, and foreigners provided much of the capital required for trade. Nonetheless, the foreign trade deficit demonstrated by the 1457/1458 Pressburg register (as found by Kováts) turned to a surplus in 1542. Using these and other figures, András Kubinyi proved that the Hungarian foreign trade deficit had almost certainly come to an end by the time of the Battle of Mohács.[280]

Mályusz Elemér has also challenged the applicability of the theory to the earlier years of the fifteenth century, on the basis of contemporary affairs. He arrived at a much lower figure than Paulinyi for the rate of issue of Hungarian florins, and showed their circulation in the West (e.g. Austria) to have been much more modest than Kováts and Paulinyi assumed. Even at that time, he argued, Hungarian livestock was the export commodity which balanced textile and spice imports from the West.[281]

The text of a 1427 decree by King Sigismund in which he took away from Queen Barbara the "thirtieth" customs duty (an estimated annual revenue of 20,000 florins) and replaced it with the *urbura* of Kremnica, implies that about 200,000 gold florins were being struck each year. Oszkár Paulinyi put Hungarian gold extraction in the second half of the fifteenth century at 410-420,000 florins. By contrast, it is possible to determine that Hungary annually produced no more than 327,000 florins in the 1480s, and the rate almost certainly decreased in the early sixteenth century, to judge from the annual drop of about 10,000 florins in Kremnica. Since the crisis in precious metal mining was also perceptible elsewhere, it is unlikely that this shortfall could have been made up for by other centres.[282]

[279] Kubinyi 1981. Gyöngyössy 2003b, 22.
[280] Kubinyi 1994, 16–19.
[281] Mályusz 1985. Mályusz 1986.
[282] Mályusz 1985, 31–33. Paulinyi 1972, 595. Gyöngyössy 2003b, 62, 101, 111, 119.

Nonetheless, the high esteem of the Hungarian florin abroad must have been significant. The success of King Matthias' (1458-1490) monetary reform to a substantial degree lay in fixing the value of silver relative to gold. On the world market at that time, the value of gold and silver had a ratio of 1:12, but the reform set the ration within Hungary (in coins, and neglecting the value of copper coins) at 1:8.38. The treasury thus revalued the silver denar and devalued the gold florin. János Ernuszt and his successors as treasurer attempted to stabilise the economy and financial affairs using the tools of monetary economic policy: they regulated the rate of coin issue. For example, after some fluctuation in the early 1480s, the minting of coins in Baia Mare was discontinued. The reform had a beneficial effect on the Hungarian economy: interest rates fell after 1470 (from 10% to 4-5%), and a sharp division emerged in foreign trade: imports were controlled by foreign financiers while exports remained in domestic hands. Hungarian traders amassed substantial fortunes from livestock exports, and there grew up a distinctive Hungarian class of market-town businessmen. The foreign merchants profited because the internationally-reputable florins they received for their goods delivered them a good margin when they went home. In the other direction, Hungarian livestock traders coming home with silver coins after selling their herds abroad could exchange them for florins at a good rate. As foreign trade developed, the crown increased its revenues from customs duties and from taxes paid by towns involved in trade, and tax collection and taxation became easier. The long term effects of this were very favourable for state finances. The fact that this exchange rate stood up for more than fifty years following the reform proves that János Ernuszt and his successors had a solid grasp of contemporary economic developments.[283]

The standard of the Hungarian florin

Hungarian monetary historiography has always taken as axiomatic that the fineness of Hungarian florins and the statutory average weight did not change during the medieval period. Csaba Tóth has found, however, that there were fluctuations in the second half of the Angevin era. This prompts the question as to whether any change can be detected during the fifteenth century. Using the Kremnica chamber accounts, Oszkár Paulinyi has determined the fineness of Sigismund of Luxemburg's gold coins as 23 1/2 carats (979.16‰). His figures must be treated with caution, however: Carl Schalk's nineteenth-century measurements came up with similar but slightly higher gold content: the florins he measured had a fineness of 981‰.[284]

The earliest certain figure for the standard of florins comes from the *Ars cementi*, and coincide with those from the Bornemissza-Werner report of 1552. The fineness was determined as 23 3/4 carats from the 1564/1565 accounts of the Kremnica chamber. Schalk's measurements differ: he found the standard of florins to be 981‰ in Sigismund's reign, 984‰ in Wladislas I's, and 982‰ in Matthias'. János Buza has produced the most recent analysis of the standard of the florin, using sixteenth century sources. He found a brief to an envoy of Ferdinand I (1527-1564) of 1533 stating that the fineness of the Hungarian florin was 23 ¾ carats (=989.6‰) and 78 of them weighed one Vienna mark, i.e. the official average weight was 3.60 grams. This standard is slightly different from what other sources tell us. In addition, Frederick III ordered the minting of florins on the Hungarian model in 1481. This is the other extreme: 80 coins were to be minted from one Vienna mark of 23 1/2 carat (979‰) gold, a statutory average weight of 3.5 grams. Research in the nineteenth century found the statutory average weight of medieval

[283] Kubnyi 1998, 112-117. Kubinyi 1992. Gyöngyössy, 2003b. 53–54., 58–60.
[284] Paulinyi 1973, 83–84. Schalk 1880, 194.

Hungarian florins to be 3.5593 grams. Carl Schalk also measured the weight of 30 of Matthias' florins and found the average to be 3.53 grams. It is interesting that the result was similar for 24 of Sigismund's florins: 3.536 grams.[285]
The issue of the fineness of the Hungarian florin thus cannot be regarded as settled. A study of foreign sources could take us closer to a full picture. A few years ago, Ernest-Oberländer Târnoveanu collected information from several Italian Catalan and French sources. Definite references to fifteenth century Hungarian florins include: "The florins of Florence, Genoa, Pisa, Hungary, Siena and Bologna are of equal value to gold" (1425, Florence), "the weight of the previously mentioned 12 types of florins of the Papal chamber, which are called Roman, Papal and eagle florins and florins of Florence, Genoa, Pisa, Hungary, Siena, Bologna, Lucca, Duchy of Milan and Venice, must be equal to the heavy Sienese standard, which … is said to be twenty-three and a half grains" (1425, Florence), "the Hungarian florins … and their official fineness is 22 carats", (Catalonia, c. 1405), "Hungarian ducat … of 23 3/4 carat gold…", "Ducats minted by … Matthias … of 23 3/4 carat gold," "another ducat .. of 23 3/4 carat gold," Ducat minted … by Wladislas of 23 3/4 gold," "the ducat minted by this Wladislas … of 23 3/4 carat gold" (Paris, before 1524) .[286]

The late medieval Hungarian system of mint mark and master's mark

Late medieval Hungarian coins have been classified by Artur Pohl using the marks they were struck with, i.e. the mint and master marks. These marks were used in controlling the mint. The distinctive late medieval Hungarian mint mark-master mark system first developed on the coins of King Sigismund's German-born chamber counts. The former personal marks gave way to a pair of letters. The first letter was usually the initial of the place of minting, and the second the initial letter of the (first) name of the person responsible for the mint; if the person concerned was a nobleman, the second letter could be replaced by his coat of arms. The mint mark system made Hungarian minting more controllable and transparent.
The earliest written mention of the system is in the chamber lease of Captain-General Jan Jiškra, instructing the chamber tenants of Košice, Captain Pál Modrár of Nagida and Ágoston Greniczer, former judge of Košice, to strike the mint mark (C = Cassovia) on one side of the cross on the obverse of the coins, and the sign of the chamber count on the other.[287]
Ladislas V's (1453-1457) coinage decree of 1453 also clearly refers to the system when it mentions the "chamber count's letters" for gold florins, and the letters to be struck on silver coins (on each side of the cross): the initial letters of the town of Kremnica and the names of the chamber counts.[288]
Hans Dernschwam the Fugger company's factor in Hungary during the Jagiello era. In his memoirs, written around 1563, he described the late medieval Hungarian mint mark-master mark system: "The two letters struck on silver and gold coins in Hungary refer to the chamber where they were minted. The *K* and the *G* mean Kremnica and György Thurzó. … in Baia Mare, since Thurzó was chamber count there too, the letters *N* and *H* were struck on the coins, meaning Baia Mare (Nagi Bania) and János Thurzó. … In Sibiu

[285] Buza 2001, 892–893.
[286] Oberländer-Târnoveanu 2003-2004, 49–52.
[287] Huszár 1975-1976, 47.
[288] Krizskó 1880, 31–32.

in Transylvania, florins were struck with the letter H and the chamber count's coat of arms."[289]
The traditional Kremnica mint mark (*K - B*) of the modern age started in the first half of the sixteenth century and originated from the mint and master marks of Bernhard Beheim (Kremnitz – Bernhard). Later – after the Beheim's fall – the mark gained a new meaning, and was looked on as the abbreviation first of Kremnitz – Bergstadt, and later Körmöcz-Bánya. Coins struck on Baia Mare coins also retained the *N - B* mint mark ("NAGI BANIA") throughout the early modern period. These letters are the precursors of the *BP* mint mark on today's coins.[290]

Crown revenues and profits on minting

When Ladislas V took over government of the kingdom after the resignation of Regent John Hunyadi (1446-1452), the king and his retinue commissioned the Austrian Ulrich Eizinger to report on the revenues of the Hungarian king. The Eizinger report is one of the main sources of monetary history of the era, and the information it contains about crown revenues extends to the reigns of previous kings. The figures for crown revenue from the mint and mining chambers also tell us about the volume of output. Eizinger's figures put the total annual revenue of the chambers (*urbura*, precious metal redemption, minting) at 24,000 florins. This is a modest sum compared to what was to come, but there are clear political and economic reasons why it may be true: revenues were dented by the changeover of power and by the location of most mints in John Hunyadi's sphere of influence, so that the mints halted their operations except in Sibiu, where Hunyadi had coins struck in Ladislas V's name but for his own profit. Even the Košice mint, run by Jiškra, did not operate for a few years.[291]

	c. 1427		c. 1453		c. 1475	
Salt regale	100,000	32 %	125,000	52 %	80,000	13 %
Portal tax	88,000	28 %	40,000	16 %	385,000	61 %
Groups of special status	25,000	8%	29,000	12 %	27,000	4 %
Mining (*) and minting	60,000	19 %	24,000	10 %	60,000	10 %
Customs	20,000	6%	12,000	5 %	50,000	8 %
Towns and Jews	21,000	7%	11,000	5 %	26,000	4 %
Total	314,000	100 %	241,000	100	628,000	10

[289] Vö. Babinger 1923. Tardy 1984. 132–133. The above quote has been transleted by the author.
[290] Huszár 1975, 165. Footnote no. 271.
[291] *Bak 1987*, 356–358., 380–384.

	00		%	00	0 %

(*including copper)

Fig. 1
Ordinary revenues of the King of Hungary in the fifteenth century (in florins)[292]

The profit on mining made up a small but rising proportion of Matthias' ordinary revenue (500-750,000 florins per year). From an assortment of contemporary sources (report by Papal nuncio Hieronymus Landus, Archbishop of Crete, 1462, and Francesco Fontana's account of crown revenues, 1475), cementation records from Baia Mare for the 1480s and 1490s, and the accounts of Péter Schaider, chamber count of Kremnica (1486-1492), we have relatively precise figures for the revenue from sovereign rights to minting and mining. In 1462, nuncio Landus put the revenue from minting and precious ore mining at 44,000 florins. Whereas Landus gave the same figure as Eizinger for the profit of the Kremnica chamber (12,000 florins), the profit of the other mints had, in the intervening ten years, increased by a factor of two or three. Unfortunately, Landus did not count the revenue of the Košice mint, but this sum can be inferred from the 1451 chamber lease to have been about 5000 florins. In May 1476, Francesco Fontana, the Hungarian king's ambassador to Pavia, delivered an account of his master's ordinary revenues, mentioning that 60,000 florins flowed into the treasury each year from the gold and silver mines. Fontana's figure most probably includes the profit on sale of copper (about 26,000 florins), so that the actual total would have been 34,000 florins. This shows a drop in revenue of 15,000 florins over fourteen years. We also have data on each chamber from the 1480s and 1490s, giving the total revenue of the three chambers working at the time as 43,000 florins. The figures show that after the great monetary reform, the chambers' yield severely declined, and then brought steady, slowly-growing and predictable income to the treasury, although the state of affairs of the early 1460s was never again attained.

	Kremnica	Sibiu	Baia Mare	Košice	Buda	Total
c. 1453	12,000	2,000	6,000	2,000	2,000	24,000
c. 1462	12,000	6,000	20,000	(*)5,000	6,000	49,000
1480s	12,000	5,600	25,000	–	–	42,600

(*on the basis of the 1451 chamber lease)

Figure 2
The profit from mint chambers in the first half of the fifteenth century[293] (florins)

Circulation of money

Sigismund of Luxemburg's ascent to the throne brought fundamental changes to the circulation of coins. The change shows up very clearly in a large number of hoards in village locations.

Sigismund's silver coins were of varying standard, and since they were the medium of inland monetary transactions, this had implications for the circulation of money. His first denars were modelled on the *bardus* of the Angevin era, often referred to as accounting currency in charters from the late 1390s. Within a short time, however, Sigismund had

[292] *Bak*, 1987. Barta – Barta 1993. Engel 1993. Fügedi 1982. Kubinyi 1990.
[293] Paulinyi 1936. *Bak*, 1987. *Kubinyi*, 1990. *Gyöngyössy*, 2003b. 58–62.

recourse to debasement, and the standard of his silver denars steadily declined. The resulting uncertainty rendered their value unstable. By the end of the fourteenth century, the new royal denar was equivalent to three *parvus*es, and one *bardus* was equivalent to two *parvus*es. Commonly known as the *fillér*, the *parvus* was the lowest-standard and most-counterfeited coin. The Hungarian gold florin maintained its successful career as a means of payment, its value consistently equalling that of the Florentine florin and Venetian ducat, and surpassing that of the Rhine forint. Since the stability of the florin benefited two key interest groups – the Hungarian magnates and foreign (Italian and south German) financiers – there could be no question of its debasement. But silver coins, the money of the lower nobility and townspeople, were viewed differently. In consequence, the silver coins' durability was a persistent problem during Sigismund's reign. The florin was used above all in the granting of pledges, payment papal taxes and conducting foreign trade with the West. The sources most frequently refer to it as *florenus,* but sometimes also as the "red florin". The Hungarian florin attained its true significance via Sigismund's reform of weights and measures.

The early fifteenth century saw the devaluation of silver coins to the benefit of gold. The florin rose to the value of a hundred and fifty denars. Twenty years would pass before the treasury restored the denar to its proper value relative to the florin. The withdrawal from circulation of *parvus*es and the issue of new and again low-standard silver coins (the *quarting* and the *ducat*) devalued the smaller denominations even further.

After Sigismund's death, there was an even greater disturbance to the country's monetary affairs. After an unsuccessful attempt to settle monetary affairs by Albert Habsburg (1437-1439), subsequent rulers were forced to give up on reform completely. Viennese coins circulated along the Austrian border; the first Ottoman coins appeared in the southern border region, and archaeological finds tell us they also reached the interior; Romanian coins seeped into Transylvania. The country thus became divided in terms of the money in circulation, and not only because of foreign currency. The legal rulers Wladislas I (1440-1444) and John Hunyadi minted only some of the coins in circulation, the rest being issued by dowager Queen Elizabeth (and later Captain-General Jan Jiškra), who controlled the mining regions of Upper and Lower Hungary. Baronial private coins minted under licence appeared in the 1440s. This situation only started to be rectified in the 1460s.[294]

Matthias' monetary reform was clearly a success in terms of circulation, because most hoards from the end of the medieval period comprise Hungarian denars. By the close of the Middle Ages, Hungarian coins had been asserted as almost the sole currency within the kingdom. Deviations from this show up in two sets of hoards where Hungarian denars were in the minority or hardly present at all. In West Hungarian finds there are large numbers of Austrian coins, which tallies with evidence from written sources: in 1495, for example, crown tax collectors in Vas County received the tax in Austrian coins. Austrian coins were of a lower standard than current Hungarian coins, but they were the medium of exchange in trade between the Hungarian border lands and the neighbouring Austrian provinces. In the Saxon region of Transylvania, hoards show a large proportion of aspers. Records show that, in the early sixteenth century, Transylvanian Saxons paid their taxes (partly) in aspers. The asper had an exchange rate set by royal decree: Wladislas II (1490-1516) ordered in 1505 that a good asper was worth two Hungarian denars. It was also in circulation: the Saxons were granted several royal charters permitting them to pay their tax in this currency. But the asper had problems of its own. The basic asper was of a high standard, but there were frequent occurrences of debased versions and even forgeries. For example, in 1505, Wladislas II instructed János Tárcai, ispán of the Székelys, to arrest and

[294] On the monetary circulation in the first half of the 15th century: Huszár 1958, 76–80. Pohl 1967-1968, Tóth 2006, Gyöngyössy 2003b. 32–35.

punish forgers of coins operating in Transylvania. In another decree to the Transylvanian Saxons, the King had aspers withdrawn from circulation: the Sibiu chamber was to strike new coins from the good ones, and the bad ones were to be destroyed. At the same time, he permitted the townspeople of Sibiu and Braşov to continue using good aspers in trade with Wallachia. A minor contribution to Hungarian monetary circulation came from Aquileian coins struck in the early fifteenth century. These probably came into the country via cattle exports, because one of the main routes that opened up in the 1470 led through the Aquileia region. Their use in Hungary is interesting because they appeared in the country fifty years after they were issued.[295]

This relatively coherent state of the currency was maintained right up to 1526. Both hoards and written sources tell us that the predominant unit of currency for paying taxes and minor commercial transactions was the Hungarian royal denar, and even during the much-lamented period of the *moneta nova* reform there were many references to the "old" denars.

[295] Gyöngyössy 2003b, 205–215. Kubinyi 1998. 116. (See also Kubinyi 1992). Gyöngyössy 2004a, 9–11. Gyöngyössy 2004b. Gyöngyössy 2004c, 329–330., 335.

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The economy of castle domains in the late medieval Kingdom of Hungary

István Kenyeres

Period boundaries and scope of research

In the thirteenth and fourteenth centuries, possession of castles became the key to power in the Kingdom of Hungary. The castle was more than just a military base; its lord had command of the surrounding domain, giving him judicial and seigneurial authority over the inhabitants. Castle estates were thus the basic sources of military and economic strength, and the ranking in the power elite enjoyed by prelates and nobles, and indeed by the king and queen themselves, ultimately derived from the number of castles and castle domains they held.[296] Of course not every castle in the medieval Kingdom of Hungary was associated with a domain (border castles, later the southern defensive border forts, etc.) and not every domain had a castle at its centre. The vast majority of settlements, however, were villages and market towns belonging to some castle domain. The main exceptions were royal free towns and towns or regions with other privileges. For the economic historian, castle domains offer a framework for macro-studies covering the majority of the kingdom's rural population.

Research questions and sources

The paucity of medieval sources on Hungary, especially sources useful for economic investigations, has hitherto largely restricted the discussion to the economy of ecclesiastical domains.[297] The relatively few studies of secular landlords' estates have focused on the numbers of estate centres, landlords' residences, manors and tenant peasants; the process of abandonment of villages; and the management of estates, particularly the role of landlords' retainers in estate administration.[298]

The prime sources for the economic history of castle estates are *urbaria* and account books (*regesta*). Supplementary sources include inventories of the movable property of castles, structures and manors and valuations (*aestimatio communis*),[299] which record the values of real estate and movable property as used by the courts. Good control sources are the state tax censuses: those for chamber's profit (*lucrum camarae*) and from the second half of the fifteenth century, the extraordinary war taxes and dues (*contributio, subsidium*) and the *dica*. The tithe (*decima*) registers also have copious data, but treated in isolation they can easily be misleading. The *urbaria* recorded all of the feudal duties, i.e. those due to the landlord. They tell us the numbers of tenant peasant holdings and of landless tenants (owning no more than a house) and the dues extracted from them: the *census*, the dues payable in kind (*munera*) and the as-yet insignificant corvée labour (*robot*).[300] Account books tell us even more about the domain economy. Unlike the *urbaria*, they cover all kinds of revenue, including such things as the *taxa extraordinaria* payable to the landlord, the dues payable by people in non-feudal bonds, such as the sheep dues of the Vlach shepherds, income from manors, trading activities, etc, customs duty income, other external income collected by the

[296] Fügedi 1977, 14–15. Engel 2003a, 101–102. Engel 2003b,162–172. Engel 2005, 324–328.
[297] A few important studies (without striving for completeness): Holub 1943, Fügedi 1981, Kalász 1932, F. Romhányi 2010a, F. Romhányi B. 2010b.
[298] Sinkovics 1933. Kubinyi 1973. Kubinyi 1986. Kubinyi 1989. Kubinyi 1991a. Kubinyi 1991b. Neumann 2003. Kenyeres 2004.
[299] Kubinyi 2001.
[300] As for the above terms, see Engel 2005, 224, 274.

castles, such as the war tax in the Jagiello era, and sometimes income from tithes on which the landlord took a lease from the church. The other category of data essential for the study of the domain economy found in the account books is expenditure.

There exist some financial records which cover several estates owned by the same aristocratic family. Such are the account books for the north-east Hungarian estates of the Szapolyai family in the period 1517−1519[301], and – from the post-Mohács period – for the Thurzó family's estates in what is now western Slovakia between 1543 and 1546.[302] These give a good insight into the economy of a group of large secular estates at the time, and the central administration and financial management of estates.

Except for ecclesiastical estates, there are hardly any "classical" domain accounts and *urbaria* from the period before the Battle of Mohács (1526).[303] Even though economic literacy on estates expanded very fast in Hungary from the late fifteenth century, there are only 24-25 domains or large estates for which *urbaria* or accounts survive from the period 1490-1530.[304] An even greater problem is that nearly all domain accounts dating from before 1526 are incomplete. In order to establish anything meaningful about the subject, we are therefore obliged to push the boundary of investigation to the end of the 1540s. No official instructions regarding domain administration have survived (neither were many of these written in the Middle Ages), but there are a great many documents (*litterae*), mainly private correspondence (*missilis*) which mention, or were issued by, domain office-bearers. These include specific orders and instructions and documents relating to the rendering of accounts or material liability relating to these. There are some domains for which we have official instructions from the post-Mohács period, but these only survive in any numbers from after 1550.[305]

The best-sourced private domains in the periods immediately before and after the Battle of Mohács are the Gyula and Hunedoara estates belonging to George, Margrave of Brandenburg.[306] There are accounts for the Hunedoara domain from the periods 1511-1522 and 1530-1534,[307] and for the Gyula domain from between 1524 and 1528. It is also for Gyula that we have the only source that can really be interpreted as an official instruction.[308] The only other domain with a similar wealth of sources is Magyaróvár, a large tract of land covering most of Moson County which became the property of Queen Mary Habsburg, wife of Louis II (1516-1526) in 1522.[309] A very detailed *urbarium* survives from 1525,[310] and there

[301] Magyar Országos Levéltár (Henceforth MOL), Diplomatikai Levéltár [Henceforth Dl] [Hungarian National Archives, Diplomatics Archives] 26161.
[302] MOL E 196 Archivum familiae Thurzo Fasc. 12. fol. 539–586, 509−537.
[303] Edited sources concerning some important ecclesiastical estates: Kovács 1992. Kredics – Solymosi 1993. Kredics – Madarász – Solymosi 1997. Solymosi 2002.
[304] Kubinyi 1993, 14. Szabó 1975, 22, 55−56, 65. Some important source editions: Pataki 1973. Kovács 1998. Prickler 1998. Nógrády 2011.
[305] Kenyeres 2002. The earliest instructions in this volume are: Magyaróvár: 1532. I. 392-399, Sáros: 1540. II. 522-527, Bishopric of Eger: 1546. I. 144-149., Archbishopric of Easztrgom Esztergom: 1550. I. 207-214, Trenčin (Trencsén) 1549 II. 743-748, Murány: 1550. II. 476-480, Szigetvár 1550. 641-646.
[306] Records of these two estates are known from source editions (Veress 1938, Pataki 1973.), it has to be noted, however, that in the Brandenurg Archives – Staatsarchiv Nürnberg Brandenburgisches Archiv, Brandenburger Literalien (copies of charters are to be found at MOL Diplomatikai Fényképtár [(henceforth: Df) U 659) – a cosniderable amount of accounts survived as regards the Slavonian possessions of the Markgrave (Varasd, Medvevár, Rakonok, Verbovc, Krapina).
[307] Pataki 1973, 1−127.
[308] Veress 1938, No. 119. (87–91), No. 121. (91–93), No. 122. (94–95), No. 127. (98–107), No. 137. (114–116), No. 138. (116–120), No. 147. (130–131).
[309] As for the estates and incomes of Mary of Hungary in Hungary see Kenyeres 2007.

[310] Országos Széchényi Könyvtár [National Széchényi Library], Kézirattár [manuscript collection], Quart. Germ. 168. (MOL Df 290 627)

are surviving accounts of the estate spanning the years 1531-1547.[311] The Magyaróvár domain accounts are practically the only set of sources which represent large estates in Hungary subsequent to 1526. It is also from here that we have the earliest official instructions, the first being from 1532.[312]

Economic management of castle estates

Administration of large medieval estates was handled by the landlord's retainers.[313] At the top of the administrative organisation were the *castellanus*, the steward *(provisor*, Hungarian *udvarbíró)* and the chief officer *(officialis*).[314] After these came the customs duty collectors, under-stewards, forest wardens, etc. The landlord's residence was the administrative centre of the estate, and it was here that the office of steward first appeared, at first with the Latin title *comes curiae*, *iudex curiae*, the origin of the Hungarian term *udvarbíró* (estate judge). In the fifteenth century, the Latin title gradually changed to *provisor curiae*, and then simply *provisor*. This word derives from the verb *provideo*, in the sense of arranging or obtaining something in advance, so that the *provisor* was basically somebody who provided or obtained something (usually food).[315] The Latin etymology well reflects the change in the duties of the title holder, because towards the end of the medieval period his responsibilities as a judge were overshadowed by his provisioning duties. The German-language title is also unusual, because before Mohács the term *Hofrichter* corresponded to *judex curia*, and had a different meaning than it had in German-speaking lands (where it usually referred to a judicial office in the royal court). The equivalent of *udvarbíró* in Austro-German terminology was *Pfleger*, having the same meaning as *provisor*, suggesting that this is the origin of the word. Indeed the *Pfleger* did originally have a judicial function too, but in the late medieval period primarily performed administrative and estate-management duties.[316]

It seems that the economic affairs of the domain initially fell within the duties of the castellan.[317] It was in the late fourteenth, and even more so in the fifteenth century that *udvarbíró*s began to take on financial responsibilities. With no instructions to go on, the duties and powers of the medieval *udvarbíró* can only be discerned from estate documents (*urbaria*, account books) and *missiles.* The office first appeared in the landlord's residence on the domain (which may be what the terms *iudex curiae, provisor curiae* and *provisor curiae castri* refer to) and – drawing a parallel with the story of the office of *judex curiae regiae* (Lord Chief Justice) – almost certainly involved duties as deputy in the landlord's powers as judge.[318] This judicial function, however, increasingly gave way to estate management and providing for the landlord's family and the numerous and assorted inhabitants of the castle. In the fifteenth century, the *provisor* of a large estate comprising several domains increasingly served in the lord's residence, while the castellans were located in the castles at the centre of each domain. From the second half of the fifteenth century, we encounter the office of *provisor castri* in a specific domain, and with increasing frequency, it is held by the same

[311] Österreichisches Staatsarchiv (henceforth: ÖStA), Haus-, Hof- und Staatsarchiv (henceforth: HHStA), Belgien Manuscrits Divers (henceforth: MD) No. 17 (341), 18 (3742), 19 (3743).
[312] Kenyeres 2002, I. 392–399.
[313] Sinkovics 1933, 6–30.

[314] Szekfű 1912, 37–46. Bónis 2003, 181−185. Kubinyi 1973, 3–44. Kubinyi 1986, 197–225. Draskóczy 1989.

[315] Finály 1884, 1611. Szenczi Molnár's dictionary refers to the word 'provisor' with the meaning of 'gondviselő' (~caretaker). At the same time, in the Hungarian-Latin index the 'udvarbíró' translates as 'provisor'. Cf. Szenci 1604.
[316] Olberg 1984.
[317] Bónis 2003, 181.
[318] As to the parallel between noble and royal estates see Bónis 2003, 144, 182.

person as the castellan. From the early sixteenth century, there were two castellans in the larger domains, one of which also held the office of *provisor*. In the system of estate administration which evolved by the late fifteenth or early sixteenth centuries, the *provisor* stood at the head of the estate's economic and administrative apparatus. He took in all of the income, arranged all of the administrative affairs and was also usually the treasurer. The castellan supervised the castles and the lands attaching to it. He also held jurisdiction over the people of the castle estate, and so was their judge in legal matters. The castellans also commanded the castle's armed forces. By the end of the Middle Ages, the *udvarbíró*, despite the literal meaning of his title, rarely sat as judge over the people of the estate, and with very restricted competence. This function was usually performed by the castellan and the *officialis* in the lord's seat, or by the *udvarbíró* together with invited jurors.[319] The castellans and *udvarbíró*s were the landlord's closest retainers. The castellan's duties were primarily military, and the *udvarbíró*'s economic, but the two areas were not clearly delineated. This is clear from the fact that the same retainer could serve as castellan and then *udvarbíró*, or even both at the same time. The primary qualification for the office was thus not expertise (in business, financial administration, farming, etc.), but loyalty to the lord of the estate.

No completely homogeneous system of estate administration emerged in the medieval period, and structures were strongly influenced by local conditions. Major factors were the size of the estate and the landlord's rank among the barons, dignitaries and prelates of the kingdom. Another defining characteristic was that a magnates who owned several domains supervised the economic affairs of his extensive lands in person or via one of his family members. In the system of criteria devised by András Kubinyi, one of the identifying marks of an aristocratic residence was that it was the administrative centre of the magnate's domains. Thus the Újlakis governed their estate from Újlak, the Szapolyais from Trenčin and the Kanizsais from Sárvár.[320] We know that the member of the Szapolyai family who lived in the residence dealt with estate affairs with the counsel of local officials: castellans and *udvarbíró*s.[321] It was also the head of the Újlaki family who retained executive control, and if he died, the estates were managed by an appointed "regency council" headed by the castellan of Kaposújvár.[322]

From the early sixteenth century, we also have some specific data on the administration of secular estates. Let us look at the example of the Gyula domain. There are documents which may be regarded as instructions: the *conventio* and *ordo* (decree) which George, Margrave of Brandenburg issued to the officers of the castle and domain.[323] Although the decree lumps together the duties for the castle's castellans and the *provisor curiae*, those assigned to the *provisor* can be clearly discerned, as can the apparatus for economic governance of the domain. The decree tells us that there were two castellans and one *provisor* at the head of the domain. In practice, one of the castellans was also the *provisor*. The *provisor* had to keep accounts of all items of income, large or small. He had to obtain a receipt for every item of expenditure and enclose it with the accounts. His duties for the manors was more than supervision. He had to "reform" them, increase cultivation on the estate, and buy calves and bullocks and have them raised on the manors, all with a view to provide a surplus for the lord. The *provisor* also had to supervise the forests. The lord prescribed that the castle was always to be provisioned with food for one year. The castellans exercised jurisdiction over the estate villages, receiving fines up to one florin. Higher fines were collected by the *provisor* for the landlord. The *officiales*, known as ispáns *(officiales seu*

[319] Kubinyi 1964, 69. Varga 1958, 12–13, 41–42.
[320] Kubinyi 1989, 89. Kubinyi 1991, 215–216.
[321] Kubinyi 1991, 215–216. Kenyeres 2004.
[322] Kubinyi 1989, 89. Kubinyi 1991, 215–216.
[323] Veress 1938, no. 104 (77–79). See also Bónis 2003, 173−174. Szabó 1975, 60−61.

ispani possessionum) were responsible for local administration. On several large estates, there was a division into areas known as *officiolatus* or *districtus*, under the supervision of *officiales*, ispáns or kenézes. Returning to the Gyula decree, an interesting novelty was that the *notarius*, paid by the *provisor*, was replaced by an official who took an oath directly to the lord, from whom he received his pay. This was based on a German equivalent, the *Gegenschreiber* (controller).[324] The function of financial controller of the estate on the German model had therefore appeared in Gyula by the early sixteenth century, but seems to have been an exception, no such function being found on any other estate prior to Mohács. Gyula is also exceptional in several other respects, all deriving from the efforts of its German lord to transplant the Brandenburg model to his Hungarian estates. In the other domains, especially those of the magnates, some specialisation was introduced into the administrative apparatus, the *provisor* being joined by the scribe (*scriba*, *notarius*), bailiff (*racionista*), estate attorney (*procurator*) and others, and there was increasing emphasis on the *provisor*'s obligation to render accounts.

The economy of castle domains

Castle-domain economics embraces several different subject areas. Here we will examine the principal economic data of a few well-sourced domains. This basically involves drawing up the balance sheet for each domain based on its surviving account books. These, together with the *urbaria*, also contain a wealth of data that could be useful for agricultural history studies – output, peasant-landlord relations, etc. – and could make important contributions to research into castle construction and material culture in general.

We begin with the estates' cash income and expenditure. Although income in kind, chiefly in the form of grain – wheat, rye, oats, barley, spelt, etc. – and wine, and in some places pigs and sheep, was also very important, the late medieval account books did not usually state these two kinds of income together. Some separate records were kept for income in kind, but since much more weight was attached to the cash accounts at the time, it is no surprise that they survive in greater numbers. Why was this? Perhaps it is related to the increasing prevalence of the money economy at this time, as pointed out by István Szabó.[325] Since payments in kind were diminishing, there was less need for landlords to keep records of them. If cash transactions were indeed becoming more prevalent, however, we might wonder why – as András Kubinyi put it – "most of the domain's income went on management expenses" and "however large a baron's estates were, he could not be sure of an income that would pay the costs of presenting himself as an aristocrat."[326] Indeed, Kubinyi saw the large estates as having been rescued from serious financial trouble only by the military reforms of 1498-1500, which officially granted landlords some of the state war tax,[327] and by the *taxa extraordinaria* (also the focus of more recent research) which the lords could impose at will.[328]

We will concentrate here on data for three large estates: Gyula and Hunedoara, belonging to George of Brandenburg, and Queen Mary's estate of Magyaróvár. The economic geography of these three estates was widely divergent, and they were located in widely-separated parts of the kingdom. Magyaróvár, in Kisalföld (Lesser Hungarian Plain), lay near

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[324] *„Item. Quod notarius de hinc, qui antea habuit salarium a provisore curiae, deinceps a domino Ill[ustrissi]mo sallarium suum exspectet, et sit juratus domino Ill[ustrissi]mo, sicut consuetum est in Germania: Gegenschreiber."* Veress 1938, no. 104 (79).
[325] Szabó 1975, 65.
[326] Kubinyi 1993, 15.
[327] Engel 2005, 358. Kubinyi 1993, 16. A detailed account on the reform: Kubinyi 1982, Kubinyi 2000.
[328] Nógrády 1996. Nógrády 2002.

the Austrian border in an area of free royal towns, and boasted fertile land, fishponds and extensive viniculture. Gyula was one of the largest estates on the Great Plain, mainly in the central and southern parts of Békés County, along the Fehér-Körös, Fekete-Körös and Kondoros rivers, and in the western corner of Zaránd County along the Fehér-Körös. It was also naturally well endowed, with productive grain fields and pasture. The domain of Hunedoara in Transylvania occupied the counties of Hunedoara and Temeş, mostly in the eastern Apuseni Mountains but extending into the Transylvanian Ore Mountains and the Temesköz area. It had less grain-growing land, but included the kingdom's foremost iron ore mining and iron works, and significant gold mining. These three estates also were also distinctively large for the Kingdom of Hungary: Magyaróvár had an area of 1115.79 km²; Gyula 2232.6 km², and Hunedoara 1611.1 km², so that together they covered nearly 5000 km² (4959.49 km²).[329]

We will examine how much cash the estates provided their owners, how the income was distributed, and what it was spent on. The other main questions concern contributions in kind and other sources of income. We will consider how these related to each other and whether the money generated by the land went to boost the magnate's wealth or had to be spent on the estate's own expenses.

First, let us examine the cash income stated in the accounts from year to year:[330]

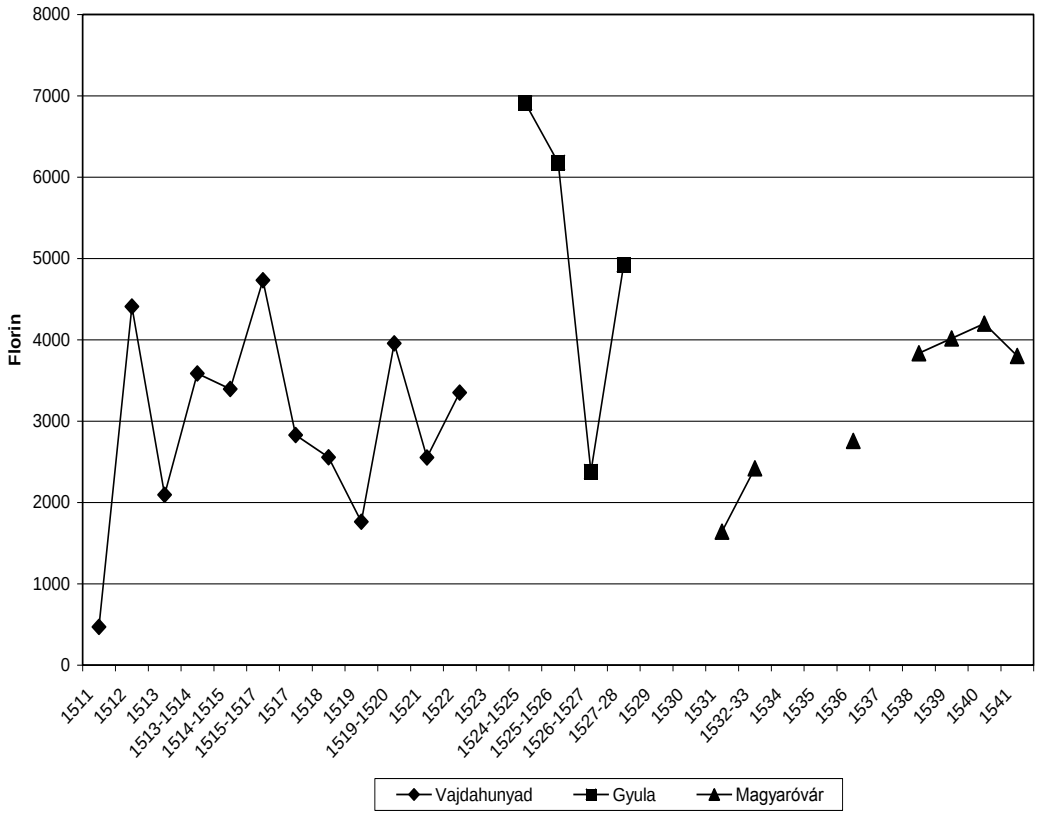

Figure 1
Cash income from the Hunedoara, Gyula and Magyaróvár estates (1511-1541)

[329] Based on the map of Engel 2002.
[330] The accounts of Hunedoara (Vajdahunyad) estate from 1518, 1521, and 1522: Pataki 1973, 42, 47−48. Revenues from the years 1511 to 1523: Pataki 1973, LXXXIX. The accounts of Gyula estate from 1524 to 1527: Veress 1938, no. 138. (116−121). In case of Magyaróvár, the accounts from 1531, 1532−1533, and 1536: ÖStA HHStA Belgien MD 17 (3741).

The table shows that the truly large estate of Hunedoara had a typical annual cash income of between 3000 and 4000 florins,[331] although there were wide fluctuations around this figure. Gyula's income was also highly variable, but in general provided Brandenburg with 6000-7000 florins, more than twice the sum in Hunedoara. (We will return to the reasons for the dip in 1526/27.) For Magyaróvár, we have data through the 1530s and up to 1541, showing that income there, in contrast to the other domains, increased steadily from between 1000 and 2000 florins at the beginning to 4000 florins.

Now we will look at the general conclusions that may be drawn from structure of income in each domain.

Income	1518	%	1521	%	1522	%
War dues	486	19.0	892	34.9	483	14.4
Extraordinary dues					900	26.9
Gold redemption	815	31.9	585	22.9	688	20.5
Census (on peasant holdings)	564	22.1	588.5	23.0	573	17.1
Fines		0.0		0.0	52	1.6
Mill income	28	1.1	20	0.8	38	1.1
Customs duty	35.5	1.4	15	0.6		
Pork and bee redemption, table money	139.5	5.5	71	2.8	31	0.9
"Fiftieth" (tax on Romanians)	283	11.1				
Sheep redemption and sale	72	2.8				
Income from mining and processing iron ore	131.7	5.2	381.8	15.0	585.7	17.5
Total	2554.7	100	2553.3	100.0	3350.7	100.0

Figure 2
Income of the Hunedoara domain (1518, 1521-1522)

The table clearly shows which sources of income dominated in the Hunedoara domain. The largest items were the extraordinary dues levied by the landlord, and war dues. Taken together, these two made up 20-40% of the total in the three years studied. The war dues included two separate categories of tax levied at the time. One was the army dues (*pecunia exercitualis*) collected from their own estates by those lords required by law to maintain their own militia (*banderium*),[332] and the royal war tax to be collected for the treasury on every estate, the *dica* (*contributio*, *subsidium*).[333] The Margrave was permitted – as we will see – to collect both of these taxes for himself, but not every year. Out of the three years studied here, he could keep both of them only in 1521, which explains the higher figure for war dues in that year. A special source of income was gold redemption, granted to the lords of the Hunedoara

[331] A korszakban használatos fizetőeszköz az (arany) forint volt. Ennek váltópénze a denarius volt, amelyből a 15. században még 100 tett ki egy Ft-ot. A 15. század végétől majd a 16. században már számítási (kamarai) pénzként használták a Ft-ot, amely továbbra is 100 dénárral egyezett meg, ugyanakkor az aranyforint kurzusa már 150-160 dénár körül mozgott. Az alábbiakban a közölt értékeket a 100 dénárt kitevő számítási Ft-ban adjuk meg.

[332] Engel 2005, 183.

[333] A fogalmakra és a rendszerre lsd. Engel 2005, 358; Kubinyi 2000. 401−407. Kubinyi 1994, 290−291. Kubinyi 1998. Vajdahunyadon a királyi dika a '*taxa regia secundum constitucionem huius regni', 'dica regia*', '*königs anschnit*', míg egyszer, 1521-ben '*dica waywodalis*', a hadakozó pénz a '*pecunia exercitualis*' és '*raißgelt*' [értsd.: Reisgeld], míg a rendkívüli taksa a '*taxa extraordinaria*' és '*meins gnedigen herrn anschnitt*' alakokban fordul elő. Pataki 1973, 2−48.

estate in the fifteenth century.[334] This made up 20−30% of the total. The census, in principle the main source of income due by right of title, was essentially constant at 560-580 florins, or 17-22%. The other classic seigneurial dues were substantial only in 1518, and steadily declined in importance, giving way to the rising local phenomenon, iron ore working, from which the income recorded in the accounts went up from 5% of the total at the beginning of the period to 15-17% by the end. Being relatively poorly endowed with agricultural resources, Hunedoara had a special income structure, in which two local sources of income, gold redemption and iron ore working, were prominent, but even they were overshadowed by the state war tax collected by the landlord and the landlord's own extraordinary tax. Since we also have figures for these two sources of income (the two kinds of war dues and the extraordinary dues), it is interesting to examine them in detail:[335]

Year	royal war tax	%	army dues	%	War dues combined as %-age of total income	extraordinary dues	%	Three categories combined as %-age of total income	Total income
1511/ 1512	300.3	4.3	315.6	4.5	8.8	683.39	9.8	18.6	6968.59
1513	815.15	27.6			27.6	448	15.2	42.8	2950.9
1514						1229	36.2	36.2	3393.79
1515	666.65	14.1	206.135	4.4	18.4			18.4	4731.54
1517						940	33.2	33.2	2827.79
1518	486	19.0			19.0			19.0	2554.7
1519						700	39.6	39.6	1768.51
1520	505	12.6			12.6	1000	25.0	37.7	3995.37
1521	392	15.4	500	19.6	34.9			34.9	2553.3
1522			483	14.4	14.4	900	26.9	41.3	3350.7

Figure 3
War dues and extraordinary dues in Hunedoara (1512−1522)

The figures show that taken together, war dues and extraordinary dues accounted on average for a third of the estate's income (32.2%). The breakdown of the figures, however, also tells us that although extraordinary dues yielded larger sums, they were not usually levied at all if both categories of war dues were available (only in 1512 do all three occur together). It is also striking that royal *dica* was collected more often (seven times, the same number as *taxa extraordinaria*) than army dues (four times). Certainly it would appear that Brandenburg obtained the extra sums he wanted through a mutually-complementary combination of these three kinds of dues.

Income	1524/25	%	1525/26	%	1526/27	%

[334] Pataki 1992, 98.
[335] For the data see Pataki 1973, 2−4., 12−16., 25., 27−28., 42−43.

War dues	1800.95	26.1	1840	29.8	37	1.6
Extraordinary seigneurial dues	1412.25	20.4	2389	38.7	27	1.1
Census	348	5.0	847.5	13.7	705	29.6
Mill income	1848.26	26.7	599.5	9.7	473.25	19.9
Customs duties	173.42	2.5	84.6	1.4	115.045	4.8
Fines	338.01	4.9	300.73	4.9	258.41	10.9
Sale of grain (ninth)	781	11.3			627.5	26.4
Sale of other produce (fish, pork, hay etc.)	151.67	2.2	114.75	1.9	89.52	3.8
Other seigneurial income (pig redemption, inheritances, forestry income, etc.)	59.34	0.9	3.65	0.1	46.92	2.0
Total	6912.9	100	6179.73	100	2379.645	100
Total, less war dues	5111.95	73.9	4339.73	70.2	2342.645	98

Figure 4
Income of the Gyula domain (1524−1526)

War dues were also the largest item in Gyula, where they similarly comprised both the royal *dica* and the army dues,[336] and added up to a third or a quarter of the domain's cash income in the two years under study. The *taxa extraordinaria*, stated as dues (*taxa*) or aid (*subsidium*),[337] was also quite high in Gyula in these two years, especially in the year of Mohács, when it made up nearly 40% of the total. Together, these two sources (war dues and extraordinary dues) amounted to 47% of income in one of the two years and 68% in the other. The figures in the table also reveal why income dipped substantially in 1526/27: that was when no war dues were collected. The following year, the Margrave's officials collected the war tax levied by John I Szapolyai (1526-1540), once more significantly increasing cash income.[338] The landlord's ordinary dues amounted to 41.3% of the total in 1524/25, 31.6% in 1525/26 and 69% in 1526/27. The dip in 1525/26 was because the war dues and extraordinary dues were so high, and the peak in 1526/27 was because they were absent. It is therefore reasonable to say that the total income from the lord's ordinary dues made up 30-40% of the total. The census income, despite its apparent variability, was in fact about 700 florins each year. The reason for the smaller figure in the first year is that only the St George's Day instalment was stated in the accounts, and the other instalment, payable on St Michael's Day, was omitted. A very substantial item was the mill income, especially in the first year, when the kingdom was still at peace. It then understandably diminished, but remained remarkably high in comparison with other domains. Also quite considerable was the landlord's commercial income, mainly sale of grain acquired from the "ninth" (the lord's share of the harvest, actually one tenth), which was 13% in 1524 and 33% in 1525. These two sources of income (mill charges and grain sales) illustrate the grain-growing nature of a fertile tract of the Great Plain. Arable farming remained important even as animal rearing grew, so that there

[336] According to the accounts from 1524–1525, 815,24 florins have been collected in county Békés, Zaránd and Arad as royal *dica* (*ex dicis Regalibus*), and in 1525 985,71 florins as army dues (*taxa exercitualis*). In 1525−1526, 1840 florins came in from county Békés and Zaránd, as war tax, approved for the king – and this time exceptionally also for the queen (*contributio Regalis et Reginalis Maiestatuum* megnevezéssel). See Veress 1938, 98−99, 117−118.
[337] E.g. as *taxa pro Domino Illustrissimo* (1525.), and also as *taxa subsidii Illustrissimi Domini* (1526).
[338] According to the accounts from 1527−1528 (Veress 1938, 121.) the castle had a total revenue of 4921 florins and 8 *denarii* in cash, out of which 823,10 florins (16,7%) was the *dica*, levied by king John I. and collected by the officials of the castle, and 1500 florins (30,5%) was the extraordinary tax.

was grain left over for sale even after the castle's own needs had been met. (By contrast, the Hunedoara domain used up all of its grain income.) Nonetheless, grain sales only made up 2% of income in 1526/27, probably because of the vicissitudes of the year of Mohács, and the increased military demand for grain.

Cash income	1531	%	1532-33	%	1536	%
Census	218.4	13.3	278.4	11.5	505.6	18.3
Customs and ferries	1113.6	67.9	653.6	27.0	1397.6	50.7
Pasture rent	81.6	5.0	38.4	1.6	115.2	4.2
Fishponds	4	0.2			35.2	1.3
Fines					56.8	2.1
Wine sales			380	15.7	302.4	11.0
Salt sales			653.2	27.0	133.6	4.8
Cowhide sales			79.6	3.3		
Sale of produce	205.6	12.5			211.2	7.7
Payments by landlord	16	1.0	336	13.9		
Total	1639.2	100	2419.2	100	2757.6	100

Figure 5
Income of the Magyaróvár domain (1531-1536)

The most striking contrast we find in the Magyaróvár domain accounts for the first half of the 1530s is the absence of war dues and extraordinary dues. In fact we know that war tax was collected for Queen Mary (e.g. 349 florins in 1542), and by the Castellan of Magyaróvár himself, but it was not stated among the domain income. Also remarkable is the magnitude of the customs income for the domain. The source of this was the cattle trade, for which the Magyaróvár domain was one of the main stations on the road to Vienna. Cattle not sold in Vienna was also rested and, if necessary, overwintered there, resulting in substantial grazing rent for the domain. Also in striking contrast with the two Brandenburg domains is the substantial income on seigneurial wine sales (*educillatio vinorum*). This was based on the domain's extensive vineyards around Lake Fertő (Neusidler See) at Neusidl am See and Rust, and substantial ninth dues payable on wine. There was also notable income from selling produce, which was in abundance. Income from grain included the tithes leased from the Győr chapter, and grain could be sold at good prices to merchants from Székesfehérvár and Pest. Then there was a somewhat exceptional source of income: salt. The salt trade had been a royal monopoly until Mohács, but in the new circumstances, the salt mines of Máramaros and Transylvania fell into the possession of John I Szapolyai. As a result, Queen Mary, a devoted supporter of her brother Ferdinand I Habsburg after Hungary split into two, could not get her hands on the salt from her east Hungarian mines (the Máramaros salt chamber in principle belonged to her). The solution was to set up a separate salt chamber and places for selling salt in Óvár and the larger market towns, such as Neusidl am See, and to bring salt down the Danube from Vienna.

Now we will examine domain expenditure. Expenditure accounts for Hunedoara are not available for all of the above years. For 1518, for example, only the total is known (2580 florins 12 denars).

Expenditure	1521	%	1522	%
Castellans' pay	440	21.5	440	13.6
Wine for castellans	80	3.9	95	2.9
Procurators' pay	24	1.2	24	0.7
Garrison	166	8.1	166	5.1
Hussars on annual service	114	5.6		0.0
Monthly-paid hussars	482.5	23.6	590	18.3
Other expenditure on castle	351.09	17.2	272.79	8.4
Kitchen expenditure	11	0.5	16	0.5
To cultivation of seigneurial vineyards	57	2.8	53	1.6
Wine purchase	48	2.3		0.0
Gold redemption expenses	111	5.4	76	2.4
Iron working expenses	158.85	7.8	195.34	6.0
Money changing expenses			4.5	0.1
Sent to lord			1297.2	40.2
Total	2043.44	100	3229.83	100
Balance	+509.86	(25.0)	+120.87	(3.7)

Figure 6
Expenditure of Hunedoara domain (1521-1522)

About two thirds of the castle expenses in Hunedoara went towards the pay of the castellans, the garrison and the hussars. The latter, some of which were taken on for a year's service (*jargalás*) and others paid monthly, accounted for 20-30% of the total. The castle's material expenses varied between 8 and 17%, and iron working and gold redemption 8-13%. It is interesting that the domain showed a substantial surplus in 1521, and the largest item of expenditure in 1522 was nearly 1300 florins sent to the Margrave! The estate therefore yielded quite substantial sums for the landlord in some financial years. The account books of 1515-1517 show that Brandenburg had nearly 1800 florins (65% of expenditure) sent to himself, mainly to Buda, and in general about 40% of expenditure comprised sums sent to meet his needs.[339]

Expenditure	1524/25	%	1525/1526	%	1526/27	%
Sent to lord	1900	33.2	296	4.0	250	10.5
Payments made by lord's command	50	0.9	4200	57.0	0	0.0
Soldiers' pay	1097.28	19.2	252	3.4	405	17.0
Castellans' pay	136	2.4	213.91	2.9	469.7	19.7
Retainers, castle folk, craftsmen	126.21	2.2	138	1.9	274.28	11.5
Wine bought for castle	628.9	11.0	1179.48	16.0	360.7	15.1
For castle needs	1397.72	24.4	1088.17	14.8	626.96	26.3
Arrears	386	6.7	5	0.1		
Total	5722.11	100	7372.56	100	2386.64	100
Balance	+1190.79		-1192.83		-7.0	

[339] Pataki 1992, 100−101. Pataki 1973, 14.

Figure 7
Gyula domain expenditure 1524-1527

The table shows that the pay of the castellans, the garrison, the castle folk and the craftsmen took up about 40% of expenditure in the first two years, although the military expenditure for 1524/1525 also includes the county militia enlisted out of war dues. These expenses made up nearly 90% of the total in 1526/1527, when there was no income from war dues. These figures therefore tell us that without war dues, even a major domain as Gyula could run into economic troubles. At the same time it is notable that the domain could provide cash of up to 2000 florins for its owner if required, and in the year of the Battle of Mohács, two thirds of its expenditure went to meet the needs of the Margrave or on expenses he ordered, and not on the Gyula domain.
So George of Brandenburg could look to both Hunedoara and Gyula for substantial sums from year to year, if not both estates every year, and when he was in particular need, as in the year of Mohács, he could get his hands on larger sums than average.

Expenditure item	1531	%	1532-33	%	1536	%
Pay of castellan, garrison and craftsmen	612	35.2	1156.8	37.8	875.2	30.1
Provisioning expenses	194.4	11.2	524.8	17.1	661.6	22.8
Castle building			262.4	8.6	561.6	19.3
Travel and other administrative expenses	2.4	0.1	28	0.9	27.2	0.9
Other castle expenses	932	53.5	365.6	11.9		
Lord's vineyards			248	8.1	93.6	3.2
Salt trade costs			478.4	15.6	568.8	19.6
Pensions					117.6	4.0
Total	1740.8	100	3064	100	2905.6	100
Balance	-101.6		-644.8		-148	

Figure 8
Magyaróvár domain expenditure (1531-1536)

It is striking that the Magyaróvár domain, despite being supported from Mary's other sources of income, ran a substantial deficit in these years. The largest expenditure items were pay and provisioning of castle personnel, accounting for nearly half of the total, but there were also major castle reinforcement works which increased, in relative terms, from 11 to 22%. The first signs of investments intended to raise estate income were emerging, however, in the form of expenditure on the salt trade and the seigneurial vineyards. It should be added that after the 1530s, the domain was able to finance the modest number of estate staff and soldiers, and even provided some surplus to be sent to the landlord, Queen Mary. Indeed, the Magyaróvár domain started to generate an increasing level of profit for its owner: Captain Eitzing paid to Queen Mary's cashier the sum of 2305 florins in 1542/1543, although this included the war tax. The Magyaróvár domain contributed more than a third (38%) of the 5963 florins which Queen Mary derived that year from what was one of her major sources of income, the

Pressburg *harmincad* ("thirtieth" customs duty[340]). The Castellan of Óvár, Jacob von Stamp, paid the Queen 500 florins from the castle's income in 1546, and 2000 florins in 1547.[341]

The other major question we have to address is income in kind. Unfortunately, the published accounts for Gyula do not reveal the domain's income in the form of grain, wine, etc., and out of the three years examined for Hudeoara, there are entries for income in kind only for 1518, and these are also very restricted. József Pataki has determined the value of the castle's income in kind for this period as between 1900 and 2100 florins,[342] so that of its almost 5000 florin annual income, cash contributions accounted for two thirds. For Gyula, the absence of other sources forces us to rely on the 1525 income assessment, which gives the enormous figure of 9802 florins for income in kind, of which the wine and pork ninths made up about 4000 each, the grain ninth about 1200 florins, and the produce of the manor only 566 florins. The assessment also states that the domain could make a further 6000 florins from the cattle and horse trade and sale of wine.[343] We have much more specific data for Magyaróvár. All grain and wine income is recorded from 1536 onwards, and even its distribution. We can even derive approximate figures for the value of local sales from their prices. The total annual income in kind adds up to between 2500 and 5000 florins, of which two thirds came from wine, although the domain also had very substantial income from grain.

Domain (year)	Cash (Ft)	%	Value of produce (Ft)	%	Total
Hunedoara (1518, 1521-22)	2819.5	58.5	2000	41.5	4819.5
Gyula (1524-1527)	5157.4	34.5	9802	65.5	14959.4
Magyaróvár (1536-39)	3536	49.4	3616.9	50.6	7152.9

Figure 9.
Average income in cash and kind on the three domains (florins)

Overall, the available data shows income in kind to have made up a substantial proportion of the total. In large, agriculturally well-endowed late medieval domains, the value of produce received could be as much as the cash income. More detailed research would be needed to verify the general validity of the conclusions drawn from the surviving accounts of these three large estates.

To give an impression of what this might involve, we will finish off with a very brief look at some examples taken from accounts of a medium-sized domain. We can get a clue to the preponderance of war dues and extraordinary dues from the example of the Lockenhaus (Léka) estate in what is now Austria. There, war dues made up 38% of income in 1524 and 28% in 1526. Despite the decrease in relative terms, the latter sum is higher, because it included "army dues" (*pecunia exercitualis)* as well as royal war tax. The reason for the

[340] Engel 2005, 156, 226.
[341] Based on the 1542−1550 accounts of Wolfgang Kremer, who was a (tax)collector (Einnehmer) of Queen Mary, and was residing in Vienna. See ÖStA HHStA Belgien MD 15. (3739)
[342] Pataki 1992, 95−96. Among the edited accounts, there is a number of data on the *naturalia* type of revenues and their value. Cf. Pataki 1973, 1−127. Revenues from crops came close to those of the Gyula estate, but from wine, they were minimal.
[343] Veress 1938, no. 119. (87−91). Estimations on the revenues seem to be overstated – even János Ahorn himself, the steward, who compiled the register, estimated the total income of the Gyula estate to 11.520 florins, however, if one sums up all the enries he has listed, the total would be 19.740 florins.

relative decrease was the substantial *taxa extraordinaria* levied in 1526, accounting for 49.5% of cash income. Without that, war dues would have constituted 56% of the income that year.[344] The two kinds of war dues made up 60% of income of Brandenburg's Krapina estate (now in Croatia) in Varasd County in 1516.[345] On the Ónod domain, 11% of the annual income around 1518 came from war dues and 28% from extraordinary dues.[346]

There were other ways of increasing cash income, such as the retail and wholesale trade of wine, and the sale of grain. Wine sales made up 35% of income in 1524 and 11% in 1526 (or 23% without the *taxa extraordinaria*). In Ónod, retail sales of wine alone made up 30% of income. Retail and wholesale wine sales were therefore also rising at a remarkable rate. Contributions in kind, especially wine, therefore had considerable value. At Lockenhaus, the 1526 wine accounts record income equivalent to 139 barrels, of which 78 barrels were from the tithes leased from the Bishop of Győr (56%). If we take an average price of 10 florins a barrel[347], the Lockenhaus wine income was 1390 florins, equivalent to 146% of annual cash income (942.06 florins)! Even in 1524, when the tithes were not leased, the income the castle derived from the mere 35 barrels it sold was equivalent to 95% of its cash income (368.71 florins). Grain also provided substantial income: the castle estate sold 870 *cubuli* of wheat and rye and 314.5 *cubuli* of oats in 1526. For want of better, we must use the 1536 Magyaróvár figures for the price per *cubulus* of wheat – approximately 46 dens; the price of oats may be taken as half of that, 23 dens. This puts a value of about 400 florins on the sales of wheat and 72 florins 33 dens on those of oats. The whole Lockenhaus grain income was therefore 472 florins 33 dens, so that in 1526, the ratio of cash and in-kind income at Lockenhaus was 1:2! At Ónod, however, using István Szabó's figures, the equivalent ratio was only 0.37. Neither of these figures seem to permit any new generalisations, but they reinforce the importance of contributions in kind.

Overall, it seems that in the period immediately prior to the Battle of Mohács, the large estates were indeed dependent on their ability to levy war dues, and the landlord could only meet his needs through imposing extraordinary dues. Without these two sources of income, they would have faced bankruptcy. It is also clear that there were other ways of raising cash income, most notably sale of wine in taverns, wholesale trade of wine by the barrel, sales of grain in some places such as Magyaróvár and Gyula, and some more specialised sources, such as the salt trade in Magyaróvár. There were yet other ways of raising money, such as pledging the *harmincad* customs duty, often managed by domain centres, as the Szapolyais did before the Battle of Mohács and the Thurzós for the local Trenčin *harmincad* in the 1540s. An illustration of how substantial this could be is that 12% of the Trenčin income was from the Trenčin and Újhely *harmincad*.[348]

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[344] In 1524 the *dica* was 141 florins, and the total revenue was 368,71 florins. MOL Dl 26 317. In 1526, 114 florins came in as *dica*, and 155 florins as *pecunia exercitualis*-ból, thus, altogether 269 florins, whereas the extraordinary tax was 468,4 florins. In that year, the total revenue of the estate was 946,02 florins. MOL Dl 26 355.

[345] The total revenue of the estate was 333,54 florins, out of which 75 florins (22,5%) was the dica (*Kriegsanschnitt*), and 124 florins (37,3%) the war rax (*Raißsteuer*, i.e. *Reissteuer*). MOL Df 267 246.

[346] Based on the figures of Szabó 1975, 64.

[347] In 1524, 13,5 barrels of wine were sold for the price of 130 florins 72 denarii (i.e. for the average price of 9.68 florins per barrel) in Lockenhaus. MOL Dl 26 317. For contemporary wine prices averaging around 10 florins per barrel, cf. Nógrády 2002, 453. In a 1528 damage assessment at Lockenhaus, two barrels of wine have been bought for 12 florins on the estate, so for the price of 6 florins for a barrel, yet it was sold out for 9 florins per barrel. Maksay 1959, 85, 87. Thus, the above sell-out price between 9 and 10 florins seems to be correct.

[348] Kenyeres 2004, 138. Kenyeres 1997, 124−125.

The main source of increasingly-important goods that could be sold for money was not the manorial farm, as Marxist historiography assumed,[349] but, as the example of the Lockenhaus estate showed, the tithe, which was leased by secular landowners from the second half of the fifteenth century onwards. The accounts of the archbishoprics of Esztergom and Eger show that the tithes were regularly let out in the late fifteenth century.[350] If the tithes had already been leased earlier, why does the income from them not appear on domain accounts before the 1520s and 1530s? There are several possible answers to this question, but the paucity of sources makes it difficult to choose between them. Certainly a single tenant often took out a lease on the tithes for the area of several counties. He was not necessarily a local landowner or magnate, but neither was the administration for all tithes in the tenancy necessarily conducted in a single domain, and it is particularly unlikely that a commoner tithe-tenant would have been able to do this.[351] Neither do we know how the tithe tenants sold the produce they collected. Before Mohács, there were few estates for which the landlord acquired the tithe tenancy.[352] It became more widespread in the first third of the sixteenth century, and magnates managed to acquired for their large estates tenancies on tithes not only for their own lands but also for parishes beyond them, so that one castle was collecting tithes from a larger area than its own domain. This might explain the increase in income, but another factor was the progressive nature of the tithe, so that the rising tithe revenue could partly have resulted from increasing agricultural output. Towards the end of the period, therefore, the tithe had an increasing role in providing income in kind, and indirectly it also had its effect on cash income, because it was the source of produce for wine sold in taverns, and for trade in wine and grain. By the middle of the sixteenth century, retailing wine and selling produce based on the tithes was the basis of the income of large estates, and displaced the extraordinary dues and war dues, which were recovered by the king. A good illustration of these developments is that on the Sempte domain, 33.8% of wine income originated from tithes in 1543, and in Galgóc, they accounted for 32% of wine income in 1542/1543, 41.7% in 1544 and 56.6% in 1545/1546. Also in Galgóc, we know how much income came from the seigneurial vineyards in 1544, and it made up no more than 4.2% of the total. On the Sempte domain, wine sold in the lord's taverns provided him with 38% of his income between 1543 and 1546. In the same period, war dues provided only 12.4%, and he only levied extraordinary dues once during the three years, when it made up 15% of the annual income, and 2.8% of the total over the period. At Galgóc in the period 1542-1546, wine sold in taverns provided 59% of cash income, war dues 14.2%, and extraordinary dues, levied only twice there, a mere 3.2%. By contrast, on the Trenčin domain, war dues accounted for 26% and retail wine sales 22%.[353] War dues completely disappeared as sources of domain income during the 1540s, because by the end of that decade Ferdinand I managed to recover control of their collection for the treasury.[354]

As regards the profitability of estates, the data presented here show that although operating expenses were indeed high, the very large estates were capable of occasionally providing their lords with sums of up to several thousand florins,[355] and the increasing income

[349] Se e.g. Pach 1963, especially 151–159. Pach 1964. Pach underlined both the establishment of manors and the increase of labor time. Indeed, there are several references on the establishment of manors from this period, yet, this did not mean a jumpstart in increasing revenues from the demesne.
[350] Kovács 1992. Fügedi 1981, 146−150.
[351] Fügedi 1981, 146.
[352] See e.g. the accounts of the estate of Szarvkő, dating from 1448, which shows that the collection of tithes (both of crops and wine) was administered by the estate. Tagányi 1895.
[353] MOL E 196 Archivum familiae Thurzo Fasc. 12. fol. 539–586, 509−537. Kenyeres 2008, 397-400, 456.
[354] Kenyeres 2005, 123–124, 136–137.
[355] See the above mentioned 1517-1519 accounts of the Szapolyai-estates in the Northeastern part of the Hungarian Kingdom (see footnote 6.), according to which roughly 6000 florins (5948 Ft) have been sent either to

in kind presented lords with money-making opportunities through selling wine locally, and commercial sale of produce.[356]

the center of the estate in Trenčin, or immediately to the Szapolyai brothers, in addition to paying off local costs. Kenyeres 2008, 250-251. Bár kicsit más viszonyok között, de 1544 és 1546 között durván két év alatt a Thurzók központi pénztárosához befolyt 10 000 Ft (10.048,5 Ft) 59%-a, azaz közel 6000 Ft (5937,8 Ft) az uradalmakból (Galgóc, Sempte, Bajmóc, Trencsén, Lindva, Nyitra) származott (a 34%-a pedig a bérelt külkereskedelmi vámokból, a harmincadokból). (See footnote 7.)

[356] The growing significance of feudal dues in kind, seigneurial wine sales, as well as of commercial activities have been already emphasized by Pach. Pach 1963, 145−151. For a summary on the role of tithe leasing, and aristocrats interested in trade during the Jagiellonian era, see Kubinyi 1994, 299−301 (with further secondary literature).

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Professional Merchants and the Institutions of Trade: Domestic Trade in Late Medieval Hungary

András Kubinyi

Domestic trade was interlinked with every branch of economic life. Peasants sold their produce or animals for money, with which they bought manufactured goods; craftsmen bought food and raw materials, much of the latter from quarries or mines. It is therefore covered in every branch of economic history to some extent, although rarely as a subject on its own.[357] Village and market-town histories also mention trade.[358] Therefore, we will focus on professional merchants and the institutions of trade.

Merchants by vocation[359]

The most important professional merchants are listed in Act 7 of 1521. This set out – without much success[360] – to tax merchants (*mercatores*), retailers (*institores*), apothecaries (*apothecarii*), shearers (*pannicidae*), shopkeepers (*boltharii*) and other money-lenders (*foeneratores*) in royal free towns and other towns enclosed by walls the twentieth part of their goods. Since the Corpus Juris recorded this with the year 1522, some authors still date it a year late.[361] Article 10 of the Act provides differently for the tax on wholesale merchants and shearers (Mercatores, Pannicidae). 50 denars had to be paid on every draught horse.[362] It is interesting that Article 4 set the basic tax on horses at only 5 denars[363], so that the law was actually attempting – via the number of horses – to tax the merchants on their capital strength. The law thus acknowledged that merchants could live elsewhere than in towns, but assumed they operated primarily at fairs and markets and were thus keepers of horses and carts. Werbőczy, the editor of the customary law collection, also distinguished *mercatores* from *institores* in recognising their right to create statutes.[364]
The most useful sources of distinctions among professional traders are to be found in urban records. Most important are statute books, accounts and minutes of meetings, but wills can also be useful.[365] Perhaps the most fruitful has been the Buda Statute Book.[366] Medieval towns wanted to grant retail trading rights, with privileges, to their own burghers, specifically to traders in certain goods and to craftsmen. Persons not specialising in a particular category of merchandise, and non-locals, could only trade wholesale, except at markets and fairs.[367] The wholesalers who supplied manufacturers or merchants can nonetheless be distinguished from dedicated retailers.[368] Their activities sometimes extended further afield, although they

[357] An important exception is the work of Bolgárka Weisz (2010).
[358] Mályusz 1963, Szűcs 1955, Székely 1961, Pach 1963, Bácskai 1965, Szabó 1969. On the archival sources of the topic, see: Solymosi 1978.
[359] Irsigler 1985, 385–397.
[360] Bónis 1965, 93–102.
[361] Kovachich 1818, I. 213., Nagy et al. 1899, 790. Under the entry: "institor" Harmatta et al. 1987–, V. 308. refer to the 6th article of the Corpus Juris Hungarici under 1522.
[362] Kovachich 1818, II.. 294.
[363] Kovachich 1818, II.. 292.
[364] Werbőczy 2005, Partis III. 2. § 7.: „nec non mercatores ac institores…"
[365] On the latter, see: Szende 2004, esp. 237–241.
[366] Published by Mollay 1959.
[367] von Below 1926, 302–398.
[368] Isenmann 1988, 248–249.

could sell retail too.[369] Finally, the full-time merchants have to be distinguished from the occasional. Wholesalers commonly belonged among the latter.[370]
The Buda Statute Book afforded top position to the "shop men" (*gewelb herren*), whose retail activity was confined to silk. They were the wholesalers, and it was mainly they who were referred to as merchants. The city council's 1421 resolution on trade, as copied into the Statute Book, is concerned with members of three main commercial categories: merchants (*kaufleut*), retailers (*cramer*) and shearers (*gewant schnaider*). This resolution makes no separate mention of the *gewelb herren*, who were thus included under *kaufleut*.[371] Retail trade of cloth was the right of the shearers (*Gewandschneider, pannicida*), who sold their wares in storerooms – unlike the "shop men", who had vaulted shops – and were thus also known as *kamerherren*. The Hungarian word for shop (bolt) is also derived from the vaulted room (boltozott).

The third category, the retailers, sold certain spices and small quantities of other, mainly cheap goods, and only in stalls, never in their houses or in shops. Their Hungarian name *kalmár* is related to the German *Krämer,* which comes from *Kram* or stall.[372] Károly Mollay has distinguished three strata of merchant society in Sopron: wholesalers (*kaufman*), retailers (*kramer*) and small retailers (*ladner*). The wholesaler's *gwelb* was in his own house, and the retailers sold their wares beside the Franciscan Church in Fő tér. The small retailers were mostly grocers.[373] The word used for retailers was *institor*, who sells in an in *instita* or, in German, *krom* (*krame*) and hence in Hungarian, *kalmár*.[374] The stallholders were organised into guilds in the larger towns.[375]
The statute book also mentions apothecaries. The Latin word apotecarius – or aromatarius, as they were also called – means spice-seller, and they also sold medicines and many other goods, such as candles. They had trading houses (*domus apotecariorum*) in Óbuda and sometimes even in villages, such as Békásmegyer.[376] Then there were linen merchants, fish-sellers, fodder and grain factors, oil-sellers, rag and bone men, grocers, etc, not to mention artisans who sold their own wares. The first four categories, however, stood at the top, and some of their members were to be found among the city fathers.[377]
Merchants thus made up a broad spectrum of occupations in Hungarian medieval cities, and the 1521 Act implies that commerce was also a vocation for many people in market towns and even villages. Since the law sought to tax them on the number of draught horses they had, they probably went round regular markets and fairs. Various registers and records of acts of might also tell us about provincial merchants. Alongside the names of some tenant peasants (*iobagi*) included in registers, there are references to merchants. Charters related to acts of might or other judicial affairs give an account of market-town or village traders at work, sometimes telling us where they travelled, what goods they bought and sold, and what these were worth. Here we will look at a few illustrative examples and we will take them by category. *Mercators*, it might be thought, lived only in towns. But in 1450, a village peasant (*iobagi*) from Zala County, Antal *mercator*, was robbed as he was taking his four-horse cart, laden with wares, to the Vásárhely fair.[378] The next reference is to the market town of Keve

[369] Isenmann 1988, 358–380.
[370] von Below 1926, 357–358.
[371] Mollay 1959, 88. (Nr. 70.) – 1421. Mollay 1959, 189. (Nr. 404.)
[372] Mollay 1982, 336.
[373] Mollay 1991, 9.
[374] Harmatta et al. 1987–. (see above footnote nr. 5)
[375] Mollay 1959, 100. (Nr. 104.). On Sopron – Ödenburg, see: Mollay 1991, 10–13. In Germany Krämer fell under guild-constraint. See: Isenmann 1988, 357.
[376] Kubinyi 1970, 65, 70–74.
[377] In details, see: Kubinyi 1973, 51–54.
[378] MOL DL 93 200. (1451)

and a merchant from there who traded throughout the country. In 1508, a mercator called Stephen Ötvös (Goldsmith), made a promise on behalf of himself and his local associates Peter Markos and Lawrence Garai that they would not harry members of the county landowning families Gyerőfi and Kemény. This was after the latter had extracted a payment of 12 gold florins from carters as taking the merchants' goods to Oradea along back roads. The carters were also from Kolozs County.[379] This means that Keve merchants used local carriers to take goods bought in Transylvania to the Oradea fair! They were probably known in Hungarian as *boltos* (shopkeepers), on the evidence of sources from elsewhere, including Pécs.[380]

There is also data on cloth merchants. A 1440 charter states that two bolts of broadcloth were impounded from Michael, a *pannicida* of Bártfalva, at the Rakasz customs post in the county of Ung, as he was going to Máramaros.[381] The interesting aspect here is that Bártfalva was a village belonging to the Sólyomkő estate in the county of Bihar, and did not even hold a fair. It is possible that people with the Hungarian surname of Posztós (*posztó* = broadcloth) were also merchants and not weavers. Michael Posztós, who was judge of Timişoara, may have been one of these.[382]

Most, although far from all, of the examples here concern retailers, in all different locations, town and village. We are fortunate to have the account book of a retailer – the same Paul Moritz[383] of Sopron – for the period 1520-1529, full of information about his wares and his commercial relations. It was published recently by Károly Mollay.[384] No other work on Moritz' accounts is know to the present author. This wealthy Sopron retailer traded almost exactly the types and quantities of goods stipulated for retailers by the Buda Statute Book.[385] These included fabrics, clothes, oil, spices, honey, wax, tallow, etc. He clearly sold small quantities directly to the public. Mollay has also determined the boundaries of his market.[386] His business extended into Austria, as far west as Mainburg, south-west of Sankt Pölten, and also to Neunkirch, Wiener Neustadt and Vienna, effectively covering the whole county of Sopron, part of Moson County and the northern part of Vas County, including Sárvár. His trading territory had a radius of about 100-110 km. He often gave loans, but also bought goods on credit.

Now for market-town and village traders. An *institor* from the market town of Torna was robbed at the Rudabánya "free market" – probably the weekly market. 16 new florins, 22 yards of canvas and 12 knives were taken from him.[387] The next example permits some further-reaching conclusions. In 1498, the *universitas* of (Nyír)Bátor made a written report to Wladislaw II in the legal dispute between Francis Harangi, *concivis* of Nyírbátor and Jakab Trommellenk of Buda. This states that Harangi produced as a witness one John, institor and *concivis* of Kisvárda. (The Nyírbátor authorities therefore did not describe these two market-town residents as *iobagi*.) Under oath, the Kisvárda *institor* John stated that Harangi had stayed with him without his wife. He did not know whether Harangi had a share in a transaction with, or was a business associate of, Tromellenk. There, Harangi had a visit from his brother Matthew, to whom he gave 75 florins, the purpose of which John did not know. Neither did he know whether the two brothers had any joint share in some transaction. Finally, the Nyírbátor *universitas* asked the king to dispense justice to Francis Harangi,

[379] Jakó 1990, II. nr. 3477.
[380] Petrovics 2001, 179, 183–185. On foreign ethnic groups in Pécs, see also: Petrovics 2009, 73–75.
[381] C. Tóth 2006, nr. 40.
[382] Petrovics 1996, 91–100.
[383] See footnote nr. 17.
[384] Mollay 1994.
[385] Mollay 1959, 100. (Nr. 104.)
[386] Mollay 1991, 24–27. (map and short text)
[387] Mályusz et al. 1951–2009, V. nr. 808.

Nyírbátor *concivis*.[388] The Kisvárda retailer John's claim to have no knowledge of the matters at issue is hardly credible. He must have had commercial contacts with the Harangi brothers if he was giving Francis accommodation. They in turn were probably associates of a Buda merchant, or at least that is what John had heard, otherwise he would not have mentioned the matter.

Perhaps the most interesting piece of information comes from a acts of might investigation of 1513. The record of the investigation gives details of the losses suffered by the victims, who were tenant peasants. Some of the robberies were committed in Szentpál, Zala County, where losses estimated at 111 florins and 92 denars were suffered by two *institors*, John and Paul Móróchelyi, who lived together, probably brothers. Of the 15 victims, only a furrier called Gregory had a comparable loss – 95 florins and 73 denars. The two retailers lost their household and agricultural implements and, it would seem, their entire stock-in-trade. This comprised hats and knives worth 60 florins and two bolts of fine linen, worth 10 florins. Their cash, however, must have been successfully hidden. The furrier was not so fortunate: the thieves got away with 60 florins cash (of which 21 were gold florins) and 26 sheepskin waistcoats (*pellicium*), each worth 1 florin, from his stock.[389]

There is a considerable body of data on retailers (*kalmár*), and the surname Kalmár is also found in registers, tax registers, urbaria and records of acts of might, in both towns and villages. A quantitative survey and analysis of these, possibly by region, could be a worthwhile line of research.[390] It seems, however, that retailers, like most craftsmen in villages or market towns, also worked in agriculture, like the above mentioned brothers of Szentpál.

None of this implies that trade was confined to some class of merchants. Indeed the persons most prominently associated with commerce (in Buda, for example) were almost never called merchants.[391] In practice, trade was open to anybody – the craftsman, the landowner, or the peasant. The "merchants" discussed here are those who were generally regarded as trading making their living from trade. That did not exclude them from cultivating land. The number of agricultural implements owned by the Móróchelyi brothers suggests substantial farming activity. It is significant that many retailers were tenant peasants. Even professional merchants could have land – Paul Moritz had vineyards, for example.

Markets, fairs, and other factors affecting trade[392]

Medieval fairs and markets

The words *mercatum* or *mercatus* in the Latin charters occur mainly in the first part of the Árpád Era.[393] Considering their affinity to the words *market*, *Markt* and *marché*, it is curious that they fell out of use in Hungarian Latin sources. That is an issue worth investigating. The most common Latin term in Hungary is *forum*, whose meaning is made clear when accompanied by an adjective (as does *vásár* in Hungarian): *cottidianum (quotidianum)* thus corresponds to daily market, *hebdomadale* to weekly market and *annuale* to annual fair. There

[388] MOL DL 20 752.
[389] Radvánszky and Závodszky 1909–1922, II. 389–395.
[390] Kredics and Solymosi 1993, 70–72, 104, 25 and 39.
[391] The most important businessmen in Buda and Pest were never called merchants. On them, see: Kubinyi 1994, 1–52.
[392] With this title I follow the German economic historian Kellenbenz, who discussed the markets under "Institutionen für den Handel". I do refer here though not only to markets: Kellenbenz 1991, 288. and following pages.
[393] Györffy 1992, 528. (Index based on the mentioned words) The first is from the appendix of the foundation charter of Tihany (1055) the second is from the foundation charter of Zselicszentjakab (1061): 152 and 172. On the early markets, see: Püspöki Nagy 1989.

were some fairs for specific merchandise (e.g. *forum equorum*[394]), and some others which must be dealt with separately. A 1242 charter designated the weekly market as *forum sollempne*, but this occurs only rarely.[395] The word *sollempnis* basically means an annual or regular event, and so implies a "festive" meaning.

A frequent term is *forum comprovinciale*, occasionally shortened to *provinciale*, and meaning "county fair". The term is used in references to the "three-fair auction", which involved a person whose goods were to be sold off being summonsed to three consecutive such fairs or markets. The sources never state whether these were weekly or annual, and other authors seem to have thought of both. The present author has determined that the term does in fact refer to the weekly market; the auction had to be carried out at county fairs near the land of the person summonsed.[396]

An apparent synonym for the *forum annuale* was *nundinae*, usually written in the plural. The two expressions were commonly used together, in the form *nundinae seu forum annuale*. In the 13th century charters, there occurrences of the word *congregatio*, and even *feria* (feast). A charter of 1287 granted permission for *nundinas seu ferias ac congregationem fori annui* in Buda.[397] The use of *congregatio* in this sense can also be found in some mid-14th century charters.[398] An example from 1295 is a report of the robbery of ten carts being driven to the Whitsun *congregatio* in Budafelhévíz.[399]

Both weekly markets and annual fairs could be further qualified with the adjective *liberum*, and always were if granted by royal charter. Erik Fügedi has determined the meaning of *liberum*, working mainly on late Árpád Era data: he claims that the king waived the taxation and jurisdiction over a "free fair" in favour of the town.[400] This may have been a characteristic of the era when towns were being founded, and "free fair" may later have meant something else. In Germany, for example, a free fair also meant one where an outsider could trade without constraints, whether or not the prince had granted exemption from tax.[401] The form of the royal charter granting the free fair evolved gradually. In 1377, for example, Simontornya received a privilege for a *congregatio*, in which Louis I exempted it, on the Buda pattern, from every jurisdiction held by magnate, noble or county. The period of the fair was set at 15 days. The king also assured the safe passage of wholesale and retail merchants and persons of any status; granted exemption from fair tax; and banned arrests for the duration of the fair.[402] In a 1501 charter of liberation granted for Varna *oppidum* in the Trencsén County, Wladislaw II granted fairs for the feasts of Holy Trinity and St Michael and the days before and after, and a free weekly market on Mondays. The king assured every merchant, retailer, fair-goer and traveller that they and their wares enjoyed the king's special protection and defence for their safe passage there and back.[403] All privileges were granted on the condition that there may be no violation of the privileges of other fairs. The liberty of the fair was proclaimed by ringing a bell.[404] The term "free fair" was thus more complex than Fügedi's definition. In the late medieval period, permitting anybody to trade without constraints and affording protection to fair-goers were probably more important considerations. For the weekly markets and even

[394] In Michalovce. E. Kovács 1992, 197.
[395] On the word "forum", see: Harmatta et al. 1987–, IV. 135–136.
[396] Kubinyi 2000, 32–35., Kubinyi 2001a, 53–60. Amongst others Blazovich 2002 refer to the markets.
[397] Kubinyi 1997, 83., Fügedi 1981, 247.
[398] Harmatta et al. 1987–, II. Fasc. 2. 304.
[399] Kubinyi 1972, 52.
[400] Fügedi 1981, 241–246.
[401] Isenmann 1988, 233.
[402] MOL DL 6413.
[403] The king informs: "universos et singulos mercatores, institores et forenses homines atque viatores quoslibet". MOL A 57 Libri Regii. Vol. 6. 8. The letter of privilege of Wladislaw II has been transcribed by Matthias II.
[404] Mollay 1959, 160–161. (Nr. 305.)

annual fairs granted to many villages, however, the noble landowner could not waive his jurisdiction, and he retained his customs rights at such times.
In other countries, there was in addition to the daily, weekly and annual fair – the *Messe*, a word nowadays used for international fairs. Kellenbenz wrote of annual fairs whose reach went beyond the region, of which some became *Messen*, which were granted special privileges.[405] There are problems with this term, because they were referred to by the same Latin word as annual fairs (*nundinae*), and in having periods of at least 14 days, were similar to many Hungarian fairs.[406] In a study of the Lorraine-Luxembourg area there was only one fair qualifying as a *Messe*, and so annual fairs were also included. The French use the word *foire* for *Messe* and annual fair, and *marché* for weekly and daily markets.[407] The question has relevance to Hungary because Vienna is regarded by some as having been – if only for a brief period – the site of a *Messe*, and some seek links between Passau, Linz, Vienna and Pressburg.[408] These links belong to the area of foreign trade and so lie outside the present subject. The reason for mentioning *Messen* is that bills of exchange were frequently used in payment there instead of cash, and so they were closely associated with the infancy of the banking system.[409] There is very little data on the commercial use of bills of exchange in medieval Hungary.

Types of fairs

No monograph has been written on fairs of medieval Hungary. The references given at the start of the paper, although containing a wealth of information,[410] do not give a full account. More has been written on the evolution and on the spatial system of fairs.[411] The difficulty is assembling data on all of the fairs, because sometimes there is only a single mention. An attempt at this by the present author through research of the central sites has not resulted in a full collection.[412] The most important sources are the scattered surviving charters of royal fairs, but the extent to which the charter was realised in practice is not always known. Much can be learned from various account books: what the keeper of the accounts bought, and for how much, possibly from whom, and where. The customs statutes can be informative on the goods being traded, but are at most typical of the time they were issued. Perhaps most important are acts of might cases, because many fair-goers were attacked, and the transcripts can tell us where they came from, which fair they were going to, and who they did business with. Finally, there are the three-fair auctions, from which the network of connected weekly markets can in principle be reconstructed. "In principle", because that auctions did not take place at the site of every weekly market. This institution was abolished by a law of 1486.
Fairs offer a very broad topic of discussion, but lack of space requires us to concentrate on only two aspects: the distance between fairs and the goods sold at them. First of all, it is important to note that the sovereign always retained the right to grant both weekly markets and annual fairs. Less than a half a dozen exceptions to this are known of. This made sense, in view of the basic principle that there should only be one market on any one day within a distance of twelve Hungarian miles (about 8000 m). There were fairs that went on without the

[405] Kellenbenz 1991, 229. Irsigler 1985, 389–390. also discusses the *Messe*s in details.
[406] Henn 1996, 205–206.
[407] Pauly 1996, 105–107.
[408] Stoob 1996, 189–204.
[409] North 1996, 223–238.
[410] See above footnote nr. 2 and 3.
[411] Major 1966, 48–90., Püspöki Nagy 1989.
[412] Kubinyi 2000, 2001a, 2005.

grant of royal privilege, mostly parish festivals.[413] There is no direct evidence of these in Hungary, although the Whitsun fair in Budafelhévíz must originally have been one.
Data on daily markets, as already mentioned, survives mainly from the Árpád Era.[414] This does not of course mean that there is no mention of them later.[415] They were essential features of larger villages and towns, and still are. They are probably mentioned less frequently because they did not receive the protection granted to the weekly and annual events.
Weekly markets were held at average distances of one or two days' travel, often at the stipulated two-mile *rasta* (rest) interval. By the late Middle Ages, anybody could find a weekly market within one or two day's journey from where he lived, although people sometimes travelled further. Owing to church influence, it was rare, if not unknown, for weekly markets to be held on Fridays and Sundays. An English calculation states that a person could travel 20 miles a day. If he wanted to get home the same day and spend a third of his time at the fair, then the distance between his home and the market could be no more than one third of 20 miles, i.e. 6 2/3 miles.[416] If we use the older 1523-metre London mile (rather than the modern 1609.35 metre mile), then the maximum distance between home and market would be 10158.4 m, slightly more than a Hungarian mile. Of course it was also possible to stay the night beside the market, and there are clues that the weekly market lasted from midday until next midday. The number of royal grants of weekly markets steadily increased. More than one annual fair could be held in one place, but only one *forum hebdomadale*, with very few exceptions.[417] The royal protection for weekly markets lasted three days.[418] This alone is evidence that not everybody came home from the market the same day.
A 1333 record of the layout of stalls at the weekly market in the village of Csütörtök in Pozsony County tells us much about wares on sale. There were stalls selling animals (cattle and horses), furs, skins, linen, broadcloth, imperishables and food; others assigned to coarse-cloth weavers, butchers, bakers, shearers, shoemakers; wine sellers; carts from which grain, firewood, building timber, cartwheels, carts, crates and chests were sold; and finally sellers of beans. The list follows the order of placing in the market. One side ended with the coarse-cloth weavers and the other started with the butchers.[419] The market must therefore have covered everybody's needs. The question remains, of course, as to how reliable this relatively early source is as a guide to later times, when there was a steep rise in the number of both weekly markets and annual fairs.
We will also look at some acts of might cases that give specific examples of market trade. A peasant was robbed of two casks of wine and eight horses at the Saturday market in Nyírbátor in 1390. The horses may have been those drawing his carts.[420] In 1413, twenty peasant women were robbed as they travelled with their wares to the weekly market in Apát.[421] We have already come across data from 1415 of linen and knives being stolen from a Torna retailer at the weekly market in Rudabánya.[422] In 1417, four carts carrying grain and other goods and seven horses were stolen from peasants going to the Wednesday market in

[413] In Austria for example there is a distinction between "rechte Markt" and the "Gaumarkt" which does not have privilege. Rausch 1996, 180.
[414] Elenchus, 1997. 33, 44, 62, 91. passim.
[415] Mályusz et al. 1951–2009, III. Nr. 1186. The daily market held in *Hétközhely* in Oradea is mentioned in 1411.
[416] Pounds 1994, 358.
[417] See my works referred in footnote nr. 56.
[418] Mályusz 1953, 130.
[419] Kristó Gyula et al. 1990–2010, XVII. (1333) nr. 345.
[420] C. Tóth 2005, nr. 67.
[421] Mályusz et al. 1951–2009. IV. Nr. 236.
[422] See footnote nr. 31.

Kisvárda.[423] In 1418, a cask of wine worth 50 florins was stolen from a peasant at the Kálló market.[424] Peasants travelling to the Kálló Wednesday market in 1422 intending to sell eight smoked flitches of pork for 26 new florins were held up on the way.[425] An item from 1481 may or may not concern a weekly market. As given in a Hungarian charter regest, peasants from Tóttelek (Bihar County), from the lands of the Csapis of Eszenyi, were driving pigs to be sold at the St Martin's Day fair in Kisvárda. On the day before the fair (7 November), the pigs were stolen and killed at (Tisza)Szentmárton, which lies 21.5 km from Kisvárda as the crow flies.[426] In 1510, a peasant and his son were on their way to the weekly market in Páka, Zala County. They were attacked, battered, suffered losses of 60 florins, and a horse worth eight florins was stolen from them.[427] That the victims in these examples were all peasants is coincidental, although they do feature most commonly. The weekly markets were mostly devoted to agricultural produce, although some manufactured goods were also sold there. It is characteristic that what was stolen from the Torna retailer was similar to what the Szentpál retailers had in store.

Things were different at the annual fairs. These were very rare throughout the Árpád Era, but afterwards more and more towns and villages were granted privileges, particularly during Sigismund's reign, and in the later Middle Ages there were several fairs a year in some towns. Many villages also held annual fairs; some more than one. Most fair-goers came from within a radius of about 20 km, although some travelled up to 60 km.[428] The ordering of fairs (and *Messen*!), i.e. their arrangement in the calendar to permit traders to move on from one to the next, has been discussed in the international and the Hungarian literature.[429] Such a system can be verified for some cases,[430] but is unlikely to have had universal validity. Some fairs attracted people from long distances. Leaving aside Buda, which was worth visiting for commercial purposes at any time, whether or not there was a fair on, two towns stand out in this respect. One is Székesfehérvár, which had four fairs spread out over the year, and attracted people from as far away as Vienna and Braşov.[431] The other was Oradea, where a total of 11 fairs were held. In a tax case which started in Oradea in 1476, the Transylvania towns were joined by burghers of Pest, Székesfehérvár, Kosiče, Prešov, Bardejov, Levoča, Pressburg and Ráckeve in an action against the taxation rights of the local chapter.[432] Since the fairs in both of these cities attracted merchants from nearly every town in the kingdom, it would be worth examining their potential classification as *Messen*.

Fairs in other towns also attracted visitors from further than 60 km. Several fair venues in the northern half of the Hungarian Great Plain had very long reaches. Oradea's was longest, at 370 km, Debrecen's was 350 km and (Tisza)Várs ány's 200 km. In addition, Cluj attracted fair-goers from distances of up to 250 km, and (Mező)Túr from up to 130 km.[433] It would be interesting to gather all data on the catchment areas of fairs and examine why some were larger than others. Four more examples. In the central place system devised by the present author, the market town of Hatvan, on the border of Heves and Pest counties had 16 centrality points, which classes it as a market town with intermediate urban functions. In 1444, men

[423] Mályusz et al. 1951–2009, VI. Nr. 391.
[424] Mályusz et al. 1951–2009, VI. Nr. 1972. The masterfulness took place in Lenten time and the market of Kálló was held on Saint George's day.
[425] Mályusz et al. 1951–2009, IX. Nr. 838.
[426] C. Tóth 2003, nr. 640.
[427] Kóta 1997, nr. 627.
[428] See my works in footnote nr. 56. Kubinyi 2004, 277–284.
[429] Fügedi 1981, 248–249., Kellenbenz 1991, 229–230., Pounds 1994, 359–363.
[430] Kubinyi 2000, 29–30., Kubinyi 2001a, 55.
[431] Kubinyi 2004, 281–282.
[432] Kubinyi 1963 190–199., Kubinyi 2000, 92.
[433] Kubinyi 2000, 169–185.

working for George Rozgonyi of Csallóköz, which is 170 km distant from Hatvan as the crow flies, were attacked on their way home and robbed of the 200 oxen and 6 horses they had bought at the fair. In 1459, merchandise worth 500 gold florins was bought from residents of Kremnica and Zvolen. The distance was about 125 km. In 1503, the governor of the Bishopric of Eger bought sawn timber for building to the value of 7 florins 70 denars there, at the St Luke's Day fair. Eger is 46 km from Eger in a straight line.[434] The market town of Muhi in Borsod also has 15 centrality points. The earliest piece of data, from 1422, is not so interesting: a peasant was attacked on his way to the fair from (Borsod)Geszt, some 32 km away. In 1425, however, nobles of Hodász (in Szatmár, 80 km from Muhi) sent their servants to buy weapons at the Muhi fair. The weapons were stolen from them on the way home. The governor of the Eger Bishopric (45 km distant) bought 16 draught oxen, horse gear and coarse linen there.[435] The market town of Michalovce in the Slovakian part of Zemplén County has 19 centrality points, classing it as a market town with intermediate urban functions. It had two weekly markets and five fairs. In 1398, 3 bolts of cloth – Bohemian cloth and fine broadcloth – were stolen from a peasant on his way to the Michalovce fair from the market town of Vranov nad Topľou in Zemplén, 23.5 km away. In 1416, tenant peasants of the noble family of Pazdics, on their way home from the fair, had 20 new florins stolen. The same year, duty was allegedly collected illegally from a potter's tenant peasants on the wares they had sold. The distance from Michalovce was only 6.5 km. Neither was a long distance involved in a acts of might case of 1417. Servants of Komoróc nobles were attacked on their 19 km journey home from the fair. In 1503, the administrator of the Eger bishopric intended to buy horses at the horse fair in Michalovce, which is 145 km in a straight line from Eger.[436] Szerencs, also in Zemplén, became an *oppidum* only immediately before the battle of Mohács, having been a village until then. It has only 10 centrality points, which classes it as an average market town or market town-like village. We have no information about its weekly market, but the single item on the annual fair is very important. According to a 1519 charter, a peasant from Tiszaluc sold four oxen on credit to a burgher of Cluj. Since the customer did not pay, the next year the seller arrested another Cluj burgher's merchandise at the Szerencs fair. It was customary for an unpaid debt to be collected from a resident of the same town as the debtor. Although we have no information on the place where the oxen were sold, it is certain that people from Cluj brought goods to sell at the Szerencs fair, a distance of 230 km.[437]

There are many other records providing information on goods sold at fairs and the losses suffered by victims of acts of might. Trade in foreign broadcloth, for example, was quite common. Some records of fair-goers who suffered losses: in 1431, men from Kismarton were robbed on their way to the St Stephen's Day fair in Székesfehérvár, with the loss of 1000 florins.[438] In 1447, wares of value 1035 florins were stolen from two residents of Székesfehérvár (one of whom was a tailor) at Tata. Here it may only be guessed that they were going to or from a market.[439]

Practically everything could be found at the weekly markets, and particularly at the annual fairs, including imported wares like broadcloth and knives. Secular and ecclesiastical lords, burghers of cities and market towns and village peasants were all represented as both customers and sellers. Transactions could be quite substantial: even village peasants often traded to the value of 20-100 florins. They were also more often attacked than nobles, and so

[434] 1459: DL 64 378. 1503: E. Kovács 1992, 199.
[435] Central place: Kubinyi 1999, 517. 1422: Mályusz et al 1951–2009, XI. Nr. 548. 1425: Borsa 1993. Dancs nr. 109. 1501: E. Kovács 1992, 114.
[436] Kubinyi 2005, 29–30. 1398: C. Tóth 2005, nr. 260. 1416: Mályusz et al. 1951–2009, V. nr. 2355. 1417: Mályusz et al. 1951–2009, VI. nr. 431. 1503: see above footnote nr. 38.
[437] Jakó 1990, nr. 3747.
[438] Horváth 2005, nr. 37.
[439] MOL DL 88 219.

there are more surviving records of crimes against them. Their cases were pressed on their behalf by their landlords. There were considerable differences among fair venues. Most had only a small market range, some served a wider region, and a few traded in goods for the whole country. The trade and geographical range of a fair, however, did not always reflect the level of urban development of the venue. Whereas geography was most important in determining the significance of the fair, other criteria were involved in urban development.

Other factors affecting domestic trade

Besides the right to hold fairs, the king granted other privileges promoting trade, mostly to towns. One of these was the staple right. Merchants had to stop in a town with such a right and offer their wares for sale to the locals. This was often connected to enforced routes, making it impossible to avoid towns holding the staple right. Landowners also tried to prevent avoidance of their customs stations, but fair-goers often used back roads. As for royal revenue, Hungarian kings put most effort into maximising levies from foreign trade, and so the subject is of lesser interest here. Some towns' staple right applied only to a small area, and thus served the interests of the landowner as much as those of the town. One of these was the Nyírbátor staple right, the credibility of which has been disputed, although it definitely existed by 1512 at the latest and perhaps was mostly to the benefit of members of its landowners, the Bátori family.[440] Another regional privilege of this kind was held by Dolná Súča in Túróc County, originally granted by Sigismund and confirmed by Matthias, Ferdinand I and, in 1572, Maximilian II. This permitted a weekly market on Tuesdays and a staple right for Polish salt. The *magister tavernicorum* was obliged to seize the salt from violators of this order. The linking of the staple right to the weekly market reflects the situation in Nyírbátor.[441]

Enforced routes were connected to customs duties imposed or permitted by the king, and also influenced trade. Unless the town itself held the right to collect duties, as was generally – but not always – the case for market duties, that influence was negative. Customs duty was collected in many forms in medieval Hungary. The "thirtieth" customs duty paid to the king took its effect primarily on foreign trade in the late Middle Ages, and so is not of interest here.[442] In addition to that and the market duties, there were road, ferry and bridge duties. In principle the holder of the rights to collect customs duty had an obligation to safeguard passage. There are many charters to prove this. In 1441, Wladislaw I granted the lords of Michalovce customs rights in return for building a bridge over the Laborc and an embankment to hold back the mud.[443]

In 1449, at the request of the county of Hont, the Regent, John Hunyadi, ordered the Provost of Šahy to build bridges over two rivers, in return for which every noble and merchant was obliged to go into Šahy and pay duty there.[444] Occasionally, a register was taken of each county's customs posts and the roads leading to them, and those held to be unlawful were closed.[445] Priests, nobles and burghers of towns and some market towns enjoyed exemption from duty, but this only applied to privately-held customs duties if the privileges of the town had been granted before the duty-collection right.[446] Merchants exempt from duty could

[440] On the territorially restricted stable right: Kubinyi 2000, 24–25. The privilege of Nyírbátor: Balogh 1999, 107–131., Draskóczy 2001, 261–273.
[441] MOL A 57 Libri Regii. Vol. 3. 1039–1040.
[442] See: Pach 1990.
[443] MOL DL 13 621.
[444] MOL DL 14 315., 16 755.
[445] 1405: Nógrád and Hont counties. Mályusz et al. 1951–2009, II/2. nr. 1412. Pozsony and Moson counties. Mályusz et al. 1951–2009, III. nr. 1584. Also see: Iványi 1905.
[446] The frequent customs lawsuit are the consequence of this. Kubinyi 1963, 189–226.

clearly sell their goods more cheaply or at a greater profit, which put traders from villages and smaller market towns in a weaker commercial position. The history of customs duties in Hungary still lacks a modern treatment.[447]

Traders found ways of avoiding customs, non-locals got round restrictions on trading at times other than markets, and even those with insufficient capital managed to make up for it. Formation of merchant companies was common in medieval Europe. These could be set up for long periods or for a single transaction. In some countries, they were organised along family lines.[448] Although article 16 of Sigismund's 1405 "Urban Decree" forbade association with foreign merchants,[449] but this could be got round by marriage or acquiring the rights of burgher in a Hungarian town.[450] Wealthier merchants, whether or not they belonged to a company, also kept employees. By the late Middle Ages, the head of the company seldom actually went to a market, but managed the business from home.[451] He had agents operating on his behalf. German charters mention two categories of these. The *diener* kept accounts himself and could take money on his principal's behalf, while the *knecht* was more of a servant.[452]

Since no merchants' account books survive, except that kept by Paul Moritz, information can only be gleaned from municipal records, landowners' and municipal account books and records of acts of might cases. There are also some rare surviving records of accounts rendered between business associates or between the head of a company and his assistant. We have already seen some examples, such as the company of Ráckeve merchants or the assumed relationship between Jakab Trommelenk of Buda with Nyírbátor merchants. Some others may be mentioned. Kosiče's oldest municipal records contain several such references. Here we will look at two persons. In 1399, the company of Kamerer Ulrik of Nuremberg is mentioned in connection with the purchase of copper. His agents issued a document bearing the company's stamp.[453] In the other case, a document states that two bolts of cloth, one of long "Lemny" and one of Bohemian broadcloth, were taken from Lőrinc Torkos, a tenant peasant of the Perényis, at the Kálló market in 1398. The Kosiče municipal records for 1402 state that John of Debrecen, son-in-law of Lőrinc Torkos of Patak (Sárospatak, then held by the Perényis) promised to pay 100 florins at the May Feast of the Holy Cross in Leles (where a fair was being held), on behalf of a resident of Levoča. Torkos is mentioned in the Kosiče municipal records in connection with loans totalling 634 florins, two concerning burghers of Krakow, and one in which the customer was Thomas Siebenlinder. In 1399, his house in the town (clearly Kosiče) was mortgaged against his debts. In 1401, his son John is mentioned as having debts of 153 florins. His may have been in business with his son and son-in-law. The point is that a market-town merchant, his son, and his son-in-law from Debrecen, had commercial dealings with merchants from Poland, Levoča and Sáros county, involving quite substantial sums. A resident of Patak, he also owned a house in Kosiče.[454]

Some examples of merchants' agents. In 1491, a Greek from Tirgoviste, a man from Sibiu and a *Rác* (ethnic Serb) from (Rác)Keve called Keresztes met in front of a house in Cluj belonging to a burgher of Sibiu. As they spoke, it emerged that Keresztes was a retainer of the Haller family from Buda. Ruprecht Haller, a patrician from Nuremberg, was the son-in-law of a Buda judge, John Münzer, and was a juror in Buda, later himself becoming a judge and a prominent merchant. Merchants from Ráckeve traded throughout the country, but the above

[447] Sólyom 1933.
[448] See: Kellenbenz 1991, 231., Pounds 1994, 356–357 and Irsigler 1985, 391.
[449] Dőry et al 1976, 204–205.
[450] Kubinyi 1994, 26–39.
[451] Pounds 1994, 356–357. and Isenmann 1988, 363–369.
[452] Mollay 1991, 19.
[453] Halaga 1994, nr. 2911.
[454] C. Tóth 2003, II. 45.

information shows that some of them were certainly in the service of merchants based in the capital.[455] One curious affair: a retainer of the Pest burgher Stephen Szép, John Bornemissza (probably actually Onwein) of Vienna (de Wyenna) lodged an action against the daughter of Matthias Eppel, a resident of Cluj, for breach of a marriage promise, but the action was mutually rescinded. What this tells us is that a Vienna merchant was in service with Pest foreign-goods dealer, and went on his master's business to Transylvania, where he almost got married.[456]

Some accounts rendered. In 1483, Christopher Weiss, retainer (*diener*) of the Buda burgher Angelus (almost certainly Angelus Kanczlyr, brother-in-law of Thomas Bakócz and younger brother of the later Buda judge John), owed his master 200 florins and rendered accounts with him before a tribunal headed by the vice-judge. He also stated that he had not put his master in debt to anyone, and he had traded only with his money. He was to repay his debt by the next Lord's Day.[457] In 1491, the Buda Council engaged Buda jurors Ruprecht Haller and John Arnolt, and burgher Peter Edlasperger (otherwise Jungher, Buda customs officer), at the request of the widow of Buda burgher (and former judge) George Forster to review the accounts of the Kosiče burgher George Ferber. Forster had given merchandise to Ferber to sell. Forster's accounts were checked against the accounts of his former retainer John Mayerhofer. He owed more than 1100 florins, but at the request of the members of the tribunal, the widow waived part of that and claimed only 1100 florins. Ferber promised to settle the debt and named his father as guarantor.[458] In this case it is difficult to establish whether Ferber was a business associate or a commercial agent. The sum involved suggests the former. It is probable that such a distinction cannot always be made. Mayerhofer was presumably Forster's accountant. The city authorities took such matters very seriously and engaged reputable merchants to check the accounts of both the debtor and the creditor.

We can move on from this to touch on the written formulation of business life, accounts. Trade in any substantial volume was impossible without business accounting. It should be mentioned, however, that double-entry bookkeeping, already common in Italy in the 14th century, had not yet spread to Hungary. Neither was it general practice in contemporary Germany.[459] Bills of exchange, used in lieu of cash from the 12th century onwards, do not appear in the records of Hungarian merchants either.[460] Market halls, however, were set up in some towns. One was the "domus apotecariorum" in Óbuda, and Prešov also made revenue on its market hall.[461]

There is much else that has to be omitted owing to lack of space, or is still awaiting adequate research. Two examples of the latter. One is carriage. As we have seen, Act 10 of 1521 taxed full-time provincial merchants on the number of draught horses they had. It is unlikely that urban wholesale merchants kept as many horses as they needed, and they probably used peasant carriers. György Székely has treated this in more detail.[462] Earlier, I quoted a charter stating that peasant carriers from Kolozs County bore merchandise of Ráckeve merchants to Oradea. The 1481 guild charter of Oradea smiths, spur-makers and sword-makers mentions carters of Štítnik (in Gömör County) who sold ironmongery in Oradea. Since the carters belonged to the same venturesome company, or guild, as the smiths, they enjoyed some concessions at the time of the Whitsun fair.[463] This shows that the carriers themselves were

[455] Jakó 1990, II. nr. 2750. On Haller. Kubinyi 1963–1964, 89–97.
[456] Jakó 1990, II. nr. 3610.
[457] The own promisor of Weiss. MOL DF 242 948.
[458] MOL DF 270 728.
[459] See e. g. Isenmann 1988, 360–363.
[460] Pounds 1994, 412–422., North 1996, 223–238.
[461] Fügedi 1981, 244.
[462] Székely 1961, 331–332.
[463] Fejér et al. 2003, nr. 4.

involved in trade. River navigation must also be mentioned. Fair-goers from Pest and its suburb of Szentfalva went by boat to the Whitsun fair in Budafelhévíz. In 1524, 58 persons, most of them artisans, were examined, mostly on where their boats were tethered. Seven of those who made statements were women, two with their husbands, two spinsters and three widows.[464] Fair-going was a family event, but sometimes the wife may have run the business.[465]

Research is needed into prices and wages. Medieval Sopron has been the subject of an excellent work,[466] but Austrian money was in circulation there, and trade was under the influence of Hungary's economically Western neighbour. The present author has gathered a large quantity of data from points scattered throughout the kingdom. What is needed is a series of data from one place. There are considerable difficulties with grain and wine prices because of fluctuations due to annual yields, and pre-harvest peaks. Something has been established, however, for the building trades. A comparison with the south German lands shows wages to have been very close. There was a difference in the costs of food and clothing. The former were lower in Hungary and the latter in the German lands. (Except for footwear, where prices in leather-rich Hungary were similar to those in Germany.) So a better-off person in Hungary who could afford more and better-quality clothes, had to spend more on provisions. Incidentally, the monthly bounty of a Hungarian foot soldier was 2 florins, which means that it was possible to live from this amount.[467]

Late medieval domestic trade: Summary

The close spacing of fairs the medieval kingdom of Hungary implies a high level of domestic trade. Agricultural produce, manufactures by Hungarian artisans, animals which were partly bred for export, and also merchandise brought in from abroad were all involved in this commerce. Not even village-dwellers, it seems, made everything for themselves. Much money was in circulation, which is understandable considering the taxes which had to be paid to the king and the landed gentry, and tithes which were often paid in money. A tenant peasant could only obtain this money by selling his produce. In practice, everybody from lord to peasant bought and sold. It should be borne in mind that commerce was not confined to the fair; much went on in the merchant’s premises or the artisan’s workshop. The large quantity of merchandise which George Ferber of Kosiče received from George Forster of Buda, for example, was not sold at a fair, because he, as a Kosiče burgher, could trade freely.

There are three further issues to consider. Marxist historiography was intent on proving that the “feudal ruling class” suppressed peasants’ market activity. To what extent is this true? What sources of income were open to the tenant peasantry? Is it possible to talk of a single national market in medieval Hungary?

Buying and selling in domestic trade was engaged in by practically the entire population of the country, including the secular and ecclesiastical lords, whose role was the subject of much effort by historians in the second half of the 20th century. A wealth of source material has been unearthed, proving that the previously-rare manorial system started to become widespread in the first half of the 16th century. This greatly increased landlords’ interest in selling agricultural produce, and brought them up against competition from burghers of cities and market towns, and from peasants. It also explains the increasing number of laws against these sections of the population during the 15th and 16th centuries.[468] We should not,

[464] MOL DL 32 685.
[465] On the role of women: Szende 1993–1996, 171–190.
[466] Dányi and Zimányi 1989.
[467] Dirlmeier 1978. My analysis: Kubinyi 1991, 24–26.
[468] See e. g. Pach 1963, 135–317. Also: Draskóczy 1996, 46–48.

however, infer that no prelates, barons or nobles were involved in trade before that time. Although it was still a minority activity among them, there were both wealthier and poorer landowners who engaged in trade. Some joined up with professional merchants as sleeping partners, providing goods or money.[469] Others, however, traded directly themselves. A good example was Michael Inárcsi, man of letters and deputy to the Hungarian Diet for Pest County at the turn of the 15th and 16th centuries, who built up a flourishing trade in wine, cattle, cloth, building timber, etc. with effectively no capital, using a loan obtained when he was a retainer to the Losonci family.[470]

The writer of these lines has been intrigued by the question as to whether the income from a peasant plot can be used to determine the living standards of the peasantry. Was a patch of poor land, often just a fragment of a plot, enough to feed a family?[471] This thought was behind a treatment, some years ago, of a register taken in Császárvár in Varasd County in 1489, showing that their fields were at most sufficient to feed themselves, but they also had vineyards, meadows, forests, fishing and mills. The annual customs revenue of the market town at the centre of the estate was estimated at the very high figure of 200 florins. (The estate lay on the Austrian border.)[472] The question has also been examined by others, such as Árpád Nógrády.[473] Professional merchants, as we have seen, lived among village and market-town peasants, but they did not have a monopoly on trade. In cases of acts of might, peasant fair-goers usually suffered losses of between 20 and 100 florins, and sometimes more. In 1420, for example, a burgher of Rojcsa in Körös County was robbed on his way home from the fair in Bélavár, Somogy County, of his six-horse cart, 30 bolts of broadcloth and 150 florins.[474]

Few records survive of tenant peasants' means in villages and market-towns. When a village was robbed, it was not certain whether the well-hidden items were found. In a case of acts of might in Szentpál, although 24 persons in three villages suffered total losses of 300 florins, only four peasants lost their own money: the furrier had 60 florins stolen, but the sums taken from other three were 10 florins, 7 florins, and 75 denars respectively. The judge of Szentpál was beaten, but suffered no pecuniary loss. The judge of Nagyberény also got away with the loss of 6 florins 65 denars he was keeping in a purse, which was tax collected for the lord, Ladislas of Kanizsa.[475] A 15th century register of debtors published by István Draskóczy shows the significance of the circulation of money in rural areas. The Manini brothers, members of the salt chamber, registered debts of 166 persons in 67 towns and villages, mainly in the north-eastern part of Transdanubia. The average figure was 10.82 florins per nobleman. Scholars had average debts of 15.75 florins, town and market-town burghers 10.57 florins and villagers 4.61 florins.[476]

The present author knows only one source which gives the exact wealth of more than one member of the rural population. This is the record of a 1518 court case involving Körmend Friary.[477] Unfortunately, only 12 witnesses stated their wealth in money terms. They included one rural parish priest (55 florins), two noblemen (100 and 50), six burghers of Körmend market town (2000, 300, 100, 100, 75 and 50), and three village peasants (46, 16 and 10). The wealthiest witness, with 2000 florins, was András Csuti, burgher of Körmend, who was a

[469] Engel, Kristó and Kubinyi 2003, 289.
[470] Based on the accounts between 1498 and 1503. MOL DL 104 071. See in details the profit-margin of the different activities: Kubinyi 1984, 23.
[471] My works on the everyday life are listed in: Kubinyi 2006, 13. footnote 1.
[472] Kubinyi 2001b, 3–17.
[473] Nógrády in present volume.
[474] Mályusz et al. 1951–2009, VII. Nr. 2158.
[475] Radvánszky and Závodszky 1992, II. 389–395.
[476] Draskóczy 1996. 93–112.
[477] Erdélyi 2005, 212–213. The edition of the register: Erdélyi 2006, 49–193. 49 witnesses has been interrogated.

cattle trader.[478] These figures show that trade offered a way to quite substantial wealth even for a person who did not live in a royal free town. They also reveal fairly narrow wealth gaps between village peasants, market-town dwellers, minor landed nobles, and priests. This explains the relatively substantial losses suffered by fair-goers in cases of acts of might: even peasants and market-town burghers could be moderately well off. Future research should devote more effort to the wealth of people of different social stations. It should be remembered here that the criterion of poverty – and thus exemption from royal taxes – was possession of less than three florins.

Market towns were especially well-placed in the circulation of trade. Recent historiography has tended to regard the *oppida* released from royal control (like Körmend), especially those acquired by ecclesiastical landlords, as having lost out under their new landlords. This was recently refuted by Norbert C. Tóth[479] and by Ján Lukačka, who argues that the new lords had no interest in curtailing the rights of their town.[480]

The extent to which the Kingdom of Hungary had a single market towards the end of the Middle Ages can not yet be definitely decided. Over forty years ago, the present author concluded from a study of several customs cases that this could effectively be ruled out: there were smaller territorial units, and only the germs of a national market, whose development was mainly in the interest of the capital-city population.[481] The discussion of markets and fairs demonstrated that most of the annual fairs which had large geographical ranges attracted merchants from only certain parts of the country, but there were exceptions: the capital city Buda – which is not dealt with separately here – and the fairs of Oradea and Székesfehérvár. In principle, then, these three centres could have bound the whole country together. There is, however, another potential angle on the issue. The range of each fair venue is determined from where fair-goers came from. We should also look at where else these people went. A merchant visiting one fair would also have visited several other rural centres, and so by linking up their places of origin it would be possible to determine a much larger market range. It is well known that merchants from the capital city (people from both Buda and Pest) made their appearance all over the kingdom. Curiously, traders from the market town of Ráckeve took their business everywhere from Transylvania to Styria (and obviously also in the Balkans).[482] The iron-mining towns of Gömör County had business relationships in several regions and in other countries.[483] Most of them had trading partners in towns and villages in modern Slovakia, Buda, and northern Transylvania. Family connections also offer a mirror on business relationships. The present author has published specific evidence of this among the burghers of late medieval Buda and Pest.[484] Recent research on other towns, such as István Petrovics' work on links between south Hungarian towns and Upper Hungary, supports this view.[485]

Although some annual fair venues may be identified as centres of commodity exchange in larger regions, more attention should be paid to towns and market towns from where merchants travelled to more than one regional centre. It is not certain that these regional centres should be regarded as more important. Returning to our examples: the present author knows of instances of merchants from Hatvan or Muhi visiting other fairs. The lesson is that much more research is needed to determine the actual commercial centres. The national-market question is thus still very far from being answered.

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[478] Erdélyi 2005, 100–101.
[479] C. Tóth 2004, 597.
[480] Lukačka 2005, 129–130.
[481] Kubinyi 1963, 189–226.
[482] Miskei 2003, 68–80.
[483] Kollomann 2005, 117–122.
[484] Kubinyi 1966, 227–291.
[485] Petrovics 2005, 131–158.

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Demographic History Issues in Late Medieval Hungary: Population, Ethnic Groups, Economic Activity

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Introduction

By examining the natural features of medieval states and the interaction of their people, we can assess their economic potential and the range of economic activities open to them. Having been constrained primarily by the extent and location of land suitable, or made suitable, for agricultural cultivation in the earlier centuries of the Middle Ages, these factors later became much more complex. Economic development in Hungary during the Árpád Era, for example, was unambiguously related to the extension of agriculture to previously uncultivated areas. In a period when the economy was dominated by cultivation and animal breeding at subsistence level and there was – as in medieval Hungary – an abundance of fertile land, the only restraint was insufficient population. During these centuries, the value of land was determined by its fertility and the presence of inhabitants in sufficient numbers and with appropriate agricultural skills and tools to work the land or bring it into cultivation. Land had little value without these, so the presence of the right people was what made it viable. Colonisation (bringing previously unused land into cultivation) and the presence of a *hospes* (settled incoming population) were thus crucial to the process of raising the country's economic potential.

In the late Middle Ages, the period under scrutiny here, several aspects of this situation changed. The vast majority of the population continued to obtain the essentials of life from agriculture, and principally arable cultivation, but no longer on a subsistence basis. More complex division of labour appeared, even within agriculture. Produce increasingly changed hands at markets and fairs, in large part via money transactions. Some branches of agriculture, such as viniculture, could produce several times more value per unit of land area than arable cultivation. The value of such produce was by then definitely realised through the mechanisms of internal trade, at markets and fairs within the kingdom, and even (in the form of wine) in foreign trade. The producer received the value in money, not goods.

At the same time, another set of natural attributes appreciated in value. In the 13th century, and even more so in the 14th, some countries drew an increasing part of their economic strength from mineral resources. The geological resources for extracting precious metals – ores suitable for mining with the technology of the time – became of increasing value, and greatly contributed to the country's general wealth. Reaping the benefit from these natural features was of course even more dependent on the presence of a population with special knowledge and skills. This explains the efforts made in the late Middle Ages to bring to the area, sometimes from great distances, and with the grant of special privileges, groups of people capable of exploiting these natural features and thus enabling a much larger source of wealth to be tapped. There were also other areas where the division of labour in society intensified in this way and the value of groups specialising in such activities appreciated. Such functions were fulfilled by a diversity of ethnic groups, often of foreign origin, their activities embracing certain branches of agriculture, mining, crafts and long-distance trade.

In the final centuries of the Middle Ages, then, the factors which increasingly determined the potential for a country's economic growth – besides natural features and the size of the local population – were the specialised activities pursued by certain ethnic groups and the economic efficiency of these activities.

Ways of determining Hungary's medieval population and their limitations

Determination of Hungary's medieval population is a major problem for historical demographic research, and has been the subject of academic disputes for several decades. As with general quantitative economic-history indices, there is a problem with the number and nature of usable sources. At first sight, calculations of the late medieval population appear to be based on two sets of sources: the papal tithe registers of the 1330s, and the summa of the royal tax censuses of the 1490s. A closer look at the data and the "methods of calculation" used to determine the population, however, prompts the conclusion that the population of late medieval Hungary cannot be determined with certainty, and any estimate has a large margin of error. No such sources are available at all for earlier periods. Consequently, under the usual demographic criteria and with due heed to source-criticism arguments, the population of medieval Hungary is indeterminate. All calculations and estimates of population and therefore of demographic indices from the time of the Conquest up to the early 16th century are thus doomed to failure. Similarly, calculations of the same indices based on extrapolation of population in the modern era do not comply with the rules set by demographers. The above two sources do, however, permit estimates to be made of the country's population in the 14th and 15th centuries.

The papal tithe registers drawn up in the 1330s were based on surveys carried out to determine the tithe revenue of the country's parishes. The sources from the last decade of the 15th century are made up of surveys of certain components of state tax revenue. Basically, therefore, the two sets of sources cannot be compared, although the lack of other sources obliges us to do so. Each set of sources also has its own individual problems. Firstly, the units they are based on do not cover the entire territory of the kingdom, so that supplementary estimates are required to obtain figures for the country as a whole. Secondly, the censuses suffered from omissions, some systematic, others random, of data which ostensibly fell within their scope, and so the sources are incomplete. Finally, it is very important to bear in mind that the 14th century data-set permits only a highly indirect estimate of population, because what was being surveyed was not the number of people but the church revenue of certain geographical areas. Although the figures are clearly related to the local population, their variations from place to place, owing to differences in economic potential (e.g. grain- or vine-growing areas), may not match the differences in population numbers.[486]

The accounting books of 1494 and 1495 contain figures entered by Zsigmond Ernuszt, the royal treasurer. They are actually summas of county tax censuses which were carried out to determine the tax base of the country. The census covered Transylvania and Slavonia, but 14 counties are missing. The figures for these 14 counties are estimated partly from other censuses and partly by other methods.[487]

A serious obstacle to both estimates is the lack of basic demographic data, which can only be obtained very indirectly. Prominent among these is the size of the family or household. The royal census did not set out to measure population like modern censuses do, but to survey the basic taxation units, which were households. This means that even a full set of data only tells us the number of heads of families among the peasantry (which researchers claim to have represented 90 per cent of the country's population). Since there is no general data on how many people lived in one household or how big the average family was, we have to look at

[486] Györffy 1984.
[487] Solymosi 1985.

censuses where for some reason all members of the family (including children) were included. Since there are very few such censuses available, and they were not intended to measure the number of people, the population has to be determined by applying multipliers. There are similar problems, if to a lesser degree, in determining the numbers of nobles or clergy. Consequently, the final figures for population stated in the research results cannot be applied in the same way as data from modern population censuses. The reconstruction of population densities using known regional differences and areas, however, does permit some general conclusions which provide useful information for the history of the economy and economic activity.

Trends in population and population density in late medieval Hungary

Most research into these sources has accepted as a usable estimate that the population of the country in the late 15th century was nearly three million (2,900,000). We thus have a figure to go on for the end of the period. It cannot be placed beside figures of similar accuracy (or rather inaccuracy) for the 14th or 13th centuries.

Other transitions, such as those between eras of political history, are also important considerations in historical demographic analysis. An appropriate starting point for analysis of demographic trends, as with economic trends, is a major event early in the period. The devastating 1241 Mongol invasion may be regarded as the dominant factor affecting late medieval population, since it resulted in a dramatic fall in the number of people living in the country. The actual magnitude of this population decline, however, is the subject another long-standing academic debate. Figures published on the percentage of the population that died during the Mongol invasion and in the subsequent famine and other disasters are highly contradictory. In the absence of exact data, researchers have tried to assess the level of devastation from indirect evidence. The analysis starts with written records of towns and villages, from which changes in the numbers of these may be determined. The large-scale destruction of settlements in the 13th century was previously explained by the Mongol invasion and the famine and epidemic which followed. It is now known, however, that there were more factors behind the loss of settlements. Archaeological excavations and – even more usefully – topographical studies have found that only a few of the very large number of abandoned Árpád Era settlements – which the written sources do not even mention – could have directly fallen victim to the ravages of the Mongols. This is particularly true of the very small scattered-farmstead like settlements which have recently been found in increasing numbers. Only a small number of finds or their circumstances display direct evidence of destruction. Burned-down, destroyed settlements with traces of unburied residents have only been found on the relatively sparsely-populated areas of the Great Plain. This reinforces the view that total destruction of settlements occurred only in certain areas and probably in smaller numbers than previously thought. At the same time, the coins and jewellery found in places all across the country, and traces of destruction of quickly-erected defensive structures, do suggest that the destruction of large sections of the population, as dramatically recorded in the written sources, does have some historical basis. Other data, however, indicate that the complete abandonment of settlements was actually due to a process of integration which occurred after, and partly as a consequence of, the Mongol invasion. Rather than a sudden transformation, this was process spanning several decades, or even a century. The important conclusion to be drawn here is that the abandonment of a large number of villages was not necessarily linked to large-scale population decline. This applies particularly to periods such as the second half of the 13th and the early part of the 14th centuries when – as known from

other data – some villages were being abandoned, while others – and notably some towns, which were starting to grow at the time – were experiencing a significant rise in population.

A comparison of historical, urban-historical and archaeological data suggests that the Mongol invasion caused the death of no more than 15-20% of the population, much less than many previous estimates, which put the figure at up to 40 or 50%.[488] Even if the decline was as steep as the higher estimates, and the country certainly experienced a severe trauma, there is very clear evidence that it was followed by a substantial increase in population within a short historical time. An increase in reproduction after the collapse, of the kind which has occurred in other eras, could only partly have been responsible for this, and a major factor in making up for the decline was in fact large-scale immigration. The process which had started before the Mongols came, in the 12th century, but the second half of the 13th century saw a distinctive change in the form of mass immigration, which continued to some extent in the early 14th century. Most incomers were from more developed areas of Europe (German lands and western and southern parts of Europe) and the eastern steppe. The first group were mostly accommodated in the *hospes* settlements. Those coming from the east during that period were mostly Cumans, and had a different pattern of settlement. The appearance and settlement of these groups greatly contributed to the flourishing of life in Hungary from the 14th century onwards. The overall effect was that, by the mid-14th century, even in demographic terms, the country had got over the destruction of the mid-13th century and was experiencing a continuous and substantial rise in population. Part of this may have been due to a clear improvement in living standards among the largest segment of society, the peasants. Archaeological excavations quite definitely show that the increasing size in peasant houses, the modernisation of heating equipment, and the spread of village houses with several rooms are good indicators of rising living standards. Underlying this were major social changes in which many more peasants gained a fairly high degree of freedom than in the 13th century. By the early 15th century, this definitely added up to a steady and relatively large population increase.

The rise in population in the 14th and 15th centuries also caused the population density in certain parts of the country to rise substantially and previously sparsely-populated areas to be settled. The most densely populated counties were in the western and south-western parts, as evidenced by the density of settlements, the large number of markets and central points in these regions, and the large number of churches identified from research into ecclesiastical topography. That these areas had considerable economic potential is a conclusion which follows indirectly from this data and is further reinforced by factors such as the scale of construction of private castles – those built after the Mongol invasion were larger. These are most densely grouped in the western and to some extent the northern parts of the country, and not in the direction from which a subsequent Mongol attack was expected, i.e. the east. There were other factors, however, behind the major population expansion in the west and north and the resulting increase in population density. The main engine of regional population growth in northern Hungary and some parts of Transylvania was the exploitation of mineral reserves, which took on new momentum in the 14th century and gave rise to new mining towns and other urban settlements. New kinds of economic activity in Hungary in the late medieval period, however, were not confined to those relatively densely-populated areas. Indeed there were some regions where the relatively low population and settlement density themselves presented opportunities for new branches of the economy, including activities with significance for foreign trade. The most obvious example is extensive animal husbandry,

[488] Cf. The related studies in Nagy 2003.

which took on an increasing role in various parts of the Great Plain in the late medieval period and produced for foreign trade. Densely-populated Italian and German towns whose demand for high-quality meat could not be satisfied by the animal-breeding capacity of the surrounding countryside proved a ready market for livestock from Hungary. By contrast, having been substantially depopulated after the Mongol invasion and then partly settled by Cumans, the Great Plain was capable of producing several times as much meat as could be consumed by the local population. The relatively large population density variations in late medieval Hungary therefore do not imply that only the high-density regions counted in the country's economic production.

It is difficult to judge the extent to which this relatively large population growth, together with substantial differences in population density, were typical of the country. Several researchers have detected the signs of some kind of decline in the second half of the 15th century and particularly the start of the 16th. In this interpretation, the population estimated for the late 15th century may therefore be less than that in the first half of the century. These conclusions, however, face the same kind of problems as the data and censuses used for the estimates. The most intense debate surrounds the proportion of *inquilini*, and particularly the house-owning *inquilini*. The increasing number of abandoned plots (uninhabited plots within villages) recorded in tax and service censuses may imply a decline in population, but could also be explained by attempts to escape royal taxes. In the latter explanation, the population did not decline as the tax base shrank, because tax was paid on plots, and if more than one family moved into one plot the tax burden per family was reduced. The details of this argument will not be presented here, but there is compelling evidence that there was no major decrease in population during this period. In the southern areas of the country, occasional incursions by the Turks must have caused some destruction, but this was probably compensated by refugees from the Balkans and the south of the country, people displaced by the same Turkish advances. Our knowledge of taxation during the Matthias Era, especially the almost annual collection of extraordinary tax, shows that there was no major change in the tax base or the number of taxpayers. Otherwise it is almost inconceivable that this tax could have been collected so often and at such a level. The mining and metalworking ventures in the north of the country also showed signs of advance, although this was not necessarily associated with a population increase.

Suggestions of economic decline and population decrease in the late 15th century must be treated with caution in the light of the increasingly clear picture of demographic trends in the 16th century. Contrary to previous views, the first half of the 16th century saw no collapse of settlements or dramatic population decline in the Great Plain or in other regions affected by the early phases of Turkish conquest. Such phenomena occurred only at the end of the century, during the 15 Years War (1591–1606), not solely as the result of military events, but through a combination of the civil-war conditions, denominational squabbles, ongoing Turkish-Hungarian battles, double or even triple taxation, changing climate, epidemics and animal diseases. Similarly, the development of areas producing livestock for foreign markets and the local and transit market places built on this trade only faltered in the second half of the 16th century. This is borne out by the censuses, archaeological data from excavations of relevant settlements (e.g. Muhi) and analysis of animal bones (e.g. Vác). The signs of economic crisis in the period prior to the Battle of Mohács in 1526 are therefore linked not to a demographic crisis but to the struggles against the Turks, which was absorbing more and more of the country's economic strength.

In sum, then, the period between the Mongol invasion (1241) and the defeat at Mohács (1526) was clearly one of demographic advance for Hungary. This does not mean that growth was steady and without downturns, but the general trend is clear. Whether this population increase is estimated at 1 million, or more, or less, the fact of its occurrence is substantiated by written sources, archaeology and urban history research. The increasing population in itself represented major potential for economic growth in a country where exploitation of diverse natural resources (cultivable land, mining, etc.) was growing at the same time. This, combined with the trend of other demographic changes, made the country, if for a short time, one of the most prominent powers in the region, capable of financing the major military ventures, internal construction and spectacular art patronage embarked on during the reign of King Matthias. The break in the process, the over-exploitation of human and economic reserves, was the consequence not so much a deterioration of demographic conditions or of economic production, but of the large-scale power shifts in the neighbourhood of the country.

Ethnic groups and economic processes

Late medieval Hungary was in every respect a recipient country in demographic terms. It was host to a large number of ethnic groups of foreign origins and diverse customs. This ethnic and cultural diversity also had a major role in the country's economic life.[489] In the Árpád Era, oriental ethnic groups were of importance mainly in the border defence system, long-distance trade and finance; and Muslim and Jewish groups mainly in trade and finance. In the late Middle Ages, this situation became even more colourful and complex, via a process which started even before the Mongol invasion and persisted throughout the 13th century. It gave rise to a state of affairs which proved durable thereafter. A major difference from the first half of the Árpád Era was the mass settlement of certain ethnic groups in concentrated areas. Three of the regions which took shape in this way stand out in terms of population and economic effect. These are the areas inhabited by the Saxons in Szepesség (Spiš)[490] and Transylvania,[491] and the Cuman settlements. Each of these had a complex structure, but relatively contiguous areas took shape through the charters granting privileges to ethnic groups of various origins. The people appearing in the sources as "Saxons" were not only from Saxony, but the word was used for all German-speaking settlers. It was largely economic considerations which prompted their invitation to settle. The agricultural techniques and systems of cultivation they brought with them were excellently suited to the colonisation of specific areas and the construction first of villages and later systems of towns. German-speaking people with a different set of special skills were brought in to populate the mining towns, a process that fitted well with the history of the German component of the evolving urban population in Hungary. All of the towns which ranked highest in the Hungarian urban hierarchy included a German population, and in many cases the granting of their privileges may be regarded as the defining points in the development of these towns. For example, a major economic resource for Buda in the 13th century, and indeed at later points in the city's development, was a system of contacts maintained by German trading and craft families, who were in many cases related to prominent burgers in other regions.

Another group who exerted a major economic effect and contributed to Hungarian urban development were the people referred to in the sources as "Latins". They also came to the country in the hope of *hospes* privileges, and were grouped according to their various neo-Latin languages. In Hungarian, they were usually called *olaszok* (Italians), but in fact came

[489] Fügedi 1974.
[490] Homza and Sroka 2009.
[491] Kristó2003, 2008.

from western parts of Europe as well as Italy. There was hardly a major town of the time, especially in the central parts of the Hungarian Kingdom, where the Latins did not have a quarter of their own, with separate rights. There were also some areas (such as the Bodrog Valley) where they lived in villages and exerted their economic influence by applying new vinicultural techniques. It is no coincidence that the best wines of the Middle Ages often had links to areas they inhabited. These relationships, as trade and the economy developed in Italy, led to more and more such groups arriving in the second half of the late medieval period, particularly trading in special products or dealing in financial affairs. Despite their relatively small numbers, they had a substantial economic significance.[492]

Also small in population terms were the Jewish communities, of which there are records in several dozen Hungarian towns in the late Middle Ages.[493] In Buda and Sopron, besides the written records, relics of Jewish material culture and excavated remains of synagogues convey their significance in urban life, and particularly their effects on the economy. They lived in separate streets or quarters, an indication of their importance, but were not at that time subjected to ghetto-like segregation. Their development was several times interrupted by banishment, although in Buda, for example, several Jewish residential areas and religious buildings can clearly be traced. The Jewish communities were not comparable in size and significance with their counterparts in some large medieval German towns, but they nonetheless had a very prominent role in Hungary. A good indication of their special situation is the separate set of privileges and legal system they enjoyed during the Matthias Era.

The Cumans formed another group of major economic significance. They were one of the largest settler groups and inhabited a large area. They were initially brought to the country not for economic purposes, but to satisfy Béla IV's need to defend the country against the approaching Mongols in 1241. The Cumans' assistance was not successful in this respect, but the king subsequently settled them in the largely deserted areas of the Great Plain and to a lesser extent Dunántúl. Previously, they had for a long time inhabited an area directly adjacent to the country, east of the Carpathians, and Béla's intention was to win over an ethnic group that represented considerable military strength. The Cuman forces and nobles retained their role beyond the late Árpád Era, into the Angevin Era. Their settlement was also a relatively rapid way of repopulating parts of the country which had been left without inhabitants. It was a process not free of conflicts, as is reported in written sources from the time. Having a different way of life, with large animal herds, the "pagan Cumans" constantly clashed with the agricultural villages in adjoining areas. The mission to the Cumans and the formation of settlements on their lands similar to Hungarian villages contributed to their gradual integration into their surroundings, although they retained their separate legal status in the areas they farmed and inhabited. Animal husbandry, particularly involving large animals, remained one of their distinctive pursuits throughout the late Middle Ages, and was undoubtedly a factor in their becoming, in the 15th century, the starting point for long-distance cattle trading. In the process, they gradually lost their prominent military role, but gained an increasing economic influence.[494]

There were many other ethnic groups of diverse origin living on the territory of late-medieval Hungary. Although their economic significance was in no way comparable to those already mentioned, they did contribute to the economic system of the Kingdom of Hungary, developing a wide range of activities that effectively exploited the assorted natural features of

[492] Petrovics 2009, Székely 2011.
[493] Berend 2001.
[494] Pálóczi Horváth 1989.

the country in the 14th and 15th centuries. It was this diversity, and the culture and adaptive capabilities of the various ethnic groups, which underlay vigorous development in the most disparate branches of the economy. The southern Transylvanian Saxon towns' trading links with the Romanian principalities, the Spiš Saxons' contacts with Polish urban centres, and the business and family connections of the German burgers of Sopron with Wiener Neustadt, Vienna and other Austrian towns all played important parts in the country's economy, as did the cattle driven from the Great Plain to German and Italian towns, and the Hungarian wine sold on foreign markets. This diversity, along with the generally positive late-medieval demographic trends, is thus one of the keys to the successful economic development of the period.

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Agriculture in Late Medieval Hungary

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Introduction

Farming and animal husbandry in late medieval Hungary has yet to be treated by an integrated monograph based on modern interdisciplinary research and the full range of possible sources, although much intensive research into certain aspects has been pursued over several decades. Although the area was at the centre of economic history studies in the 1950s and 60s, yielding many treatments whose details have retained their influence to the present day, we still do not have a book that covers the whole era. One reason for this is the multiplicity of new sources available to research nowadays, with archaeological findings particularly gaining ground alongside the standard and long-studied written sources. The greatest changes have occurred in the history of agricultural implements, although historical zoology and botany have also contributed important new science-based methods. Landscape history and landscape archaeology have made considerable progress in studying traces of cultivation and systems of land use around villages. This short paper, then, cannot substitute for a full monograph on the subject, but provides the opportunity to survey the main conclusions of Hungarian agricultural history in the late medieval period, and outline current areas of research and problems requiring treatment. The subject is closely bound up with the late medieval history of animal husbandry, dealt with in another chapter of this book. Here, animal husbandry will only be touched on where it is inseparable from arable cultivation.

The place of farming and animal husbandry in Hungary's late medieval economy

Throughout the Middle Ages, the largest section of the population of Hungary lived in villages, working the land or rearing animals. In the Árpád Era, apart from a relatively small number of aristocrats, ethnic groups serving military functions, those who made their living purely from crafts or trade, and the clergy, nearly everybody was involved in agricultural activity. Consequently, every section of society lived according to the annual cycle of agricultural work, the seasonal calendar of sowing and harvesting and the slaughter of animals in winter. This even affected the movements and life of the royal court, because monarchs at that time regularly travelled round the royal estates and the castles in royal county centres, where the produce and products of surrounding areas and estates were accumulated, to be consumed, in part, by the king and his retinue.

By the end of Árpád Era, the area of land under cultivation in Hungary had grown considerably, although very large animal herds were still a distinctive feature of the country. The resulting increase in output formed the basis of two major changes. One was the general and substantial increase in population. From a number no more than one million at the time of the Conquest (both the Magyars and the peoples they found there) the population had certainly doubled by the 13th century. Indeed the growth may have been even faster, especially if incoming ethnic groups are included. The other was the formation of urban centres with significant concentrations of population, where most of the inhabitants made their living from crafts and trade, but naturally could only be maintained by higher agricultural production. Such towns had a large demand for food. A town the size of Esztergom, for example, required a 20- or 30-kilometre deep hinterland to provide its daily supply of grain and meat and cover the food requirements of an even larger area. In addition to these expanding urban settlements, the burgeoning agricultural produce was capable of

supplying a larger number of clergy, such as monks of the mendicant orders (Franciscans, Dominicans, etc.) who took no part in agricultural work. This trend was broken by the Mongol invasion, which caused a severe fall in the population as a whole and must have disproportionately afflicted those who were less mobile, i.e. the land-bound peasantry.

After the Mongol invasion and the major agricultural growth of the second half of the 13th century, the area of agricultural land and the produce it yielded increased steadily from the early 14th century up to the Battle of Mohács. This permitted a considerable rise in the country's population and the formation of several large social classes and groups whose economic base was no longer agriculture, people who were maintained by the agricultural produce of the peasant population. As in the two centuries preceding the Mongol invasion, the population growth during this period brought rapid and substantial changes, although a lack of satisfactory sources means that little is known of the details. The first national census which permits even an indirect derivation of the number of basic taxpayers – the tenant peasants – was taken in the late 15th century, and the sizes of other sections of society can only be estimated. There is a problem, for example, in deciding how to determine the number of landless peasants or *inquilini*, who were treated differently for taxation purposes. It is also difficult to say whether the abandonment of peasant plots recorded in the sources resulted from an actual drop in the village population, or whether it was due to families moving together or making some other attempt to avoid paying royal taxes. Not every census mentions *inquilini*, and only a few refer to "*inquilini* without houses". The latter were often left out by the census-takers, unlike *inquilini* who had their own houses. The problem this causes for studies of medieval agriculture is that *inquilini* without houses may have had land, tenancies, vineyards and forest clearings, and they certainly accounted for some inhabitants of market towns. The taxable unit in agricultural villages is also a source of difficulty: how many people, and what family structures, did it embrace? The possible variations have caused some calculations to put the population as high as 3.5 million. What is certain is that village peasants constituted the most numerous section of the population, although their agricultural output supported a nobility which was outstandingly large even by European standards (although its lowest stratum, the "one-plot nobles", themselves took part in farming), and satisfied the demands of the by-then well-advanced towns and market towns for food and other agricultural products. The same is true for the maintenance of the military people (royal professional army and garrisons of the line of forts built to stem the advance of the Ottoman Turks), who became considerably more numerous towards the end of the period. In addition, the breeding of cattle grew to such an extent as to make Hungary one of the major suppliers of livestock to central and southern Europe, resulting in substantial foreign trade with these areas. The sources also tell of horse breeding on a similar scale, although exports of horses were restricted.

Consequently, agriculture, the most significant branch of the economy in medieval Hungary, was capable of satisfying the country's demand for food and left a considerable surplus for export.

The environmental and climatic conditions of agriculture in medieval Hungary

The vast majority of the lands of the Carpathian Basin have soil and climatic conditions which suit them to any of the techniques of farming known in the Middle Ages. Much land was used for cereal production, and furnished satisfactory yields from both autumn and spring sowing. Cereals sown at these different times provided protection against extremes of winter and summer weather, i.e. in years when the temperature or rainfall severely departed from the average. Low-lying areas and the lower hilly areas in centre of the country had

rainfall and average temperatures which suited them to the strains of wheat which gave the highest-quality flour, whereas areas on the periphery of the Carpathian Basin, particularly eastern Transylvania or the north of the kingdom (now the highlands of Slovakia), where the climate was more definitely continental, were restricted to hardier cereals tolerant of wider extremes of temperature – rye, barley, oats and millet.

The extent of arable land was constrained by three basic factors. The upper reaches of highland areas – mostly the eastern and northern parts of the medieval kingdom and the high-up steep hillsides or enclosed but cold plateaus of the Northern Range and Transdanubian Range – were not suited to growing crops, but did support animal rearing. Another factor, dense forests, applied mostly in the highlands. Forests covered a much greater proportion of the Carpathian Basin in the Middle Ages than they do today. The extent of forested area in the Carpathians was certainly not less than the present, and there were considerable changes to forested areas in the centre of the country – the Great Plain, the lower-lying hills and the central ranges – over the centuries of the Middle Ages. The areas of forests on the Great Plain and in Transdanubia probably declined steadily between the 13th and 16th centuries, and were substantially smaller than in the Árpád Era. The principal cause of this contraction was undoubtedly the spread of agricultural cultivation. Nonetheless, forests still no doubt covered a greater proportion of the plains than in the early modern age, from when more reliable data is available. This is probably the case even if we allow for the return of forests to some degree in such areas during the Ottoman occupation. The fastest change of forested areas took place in the medium-height hills and central hill ranges. There are reports of forest areas cleared for cultivation dating to the Árpád Era, and the process clearly accelerated in the 14th and 14th centuries as internal colonisation extended the area of cultivation and plantation. Clearance for agriculture caused arable cultivation in these geographical regions to spread to higher altitudes and parts which were covered by forest in the modern age, i.e. cultivation extended further in the Middle Ages than in subsequent periods. This phenomenon has made it possible to observe medieval cultivation in areas of higher hilly areas where land was tilled and agricultural villages founded in the late Middle Ages but no longer existing in the modern age, their lands having been reclaimed by the forest.

Another constraining factor on the expansion of areas under cultivation in the medieval period was the extent of flood-prone land. This was mainly in flat countryside near the large rivers, where enormous areas could be inundated or were permanently under water. In some parts of the Great Plain, these areas were larger than those which were free of flooding. There were often 4-5 kilometre flood plains beside the large rivers, and continuous expanses of water up to 10-15 km wide could form at confluences (Tisza-Körös, Tisza-Maros, Danube-Tisza, etc.) when the floods came. Large-scale reclamation projects to regulate these only started in the 19th century, which greatly increased the land available for cultivation at the expense of the flood plains. These areas, despite having suitable soil, could not support cereals in the Middle Ages. The second flood wave of late spring or early summer often reached these lands so late that grain sown there afterwards would not have ripened. This does not, however, mean that the flood plains had no agricultural utility. Medieval farmers on the flood plain combined fishing, pasture and fodder-gathering, often with artificial water regulation and level-balancing systems. The latter were not usually built to keep out the floods, but kept some of the flood water in the flood plain so that it could be used later. It is possible that this large expanse of surface water affected the micro-climate in such a way as to reduce the danger of drought on neighbouring flood-free land. Similar farming went on in marshlands of similar extent (Sárvíz, Kis-Balaton, etc.) where the land supported a substantial population despite the near absence of arable farming.

The extent of medieval arable land surpassed that of the modern age in more than just the hilly forest clearings. The *puszta* or steppe lands (Hortobágy and the Kecskemét area) and sand dunes (Nyírség and the area between the Danube and the Tisza) have been found by settlement history research to have supported a dense network of agricultural villages in the Árpád Era and to some extent even in the late medieval period. The modern sparsely-inhabited *puszta* environment only formed during the Ottoman and early modern periods, although some of the phenomena involved in the change may have started in the late medieval period. Through the effects of increasing extensive animal rearing, possibly climatic changes, and processes which are still not fully understood, villages which also carried on arable cultivation withered and perished, and the land became unsuitable for arable cultivation. The reversion of some areas to wilderness (e.g. the land between the Danube and the Tisza) may to some extent have been caused by tillage and intensive animal rearing. For example, movement of sand dunes may have been exacerbated by intensive agricultural production over a long period. Of greater significance, however, were the wars of the later period (16th-17th centuries) and the general decline of the population caused by the hostilities of the Ottoman period.

The geographical features of the Carpathian Basin and its medieval climatic conditions were favourable for viniculture and fruit growing as well as arable farming. Apart from the highlands and northern parts of the country, nearly every village had “vine slopes” nearby that at least satisfied the local demand for wine. The grapes were not of particularly high quality, and the wine typically remained fit for consumption only until the next year’s new wine was ready. The grapes from some areas, however, like the Buda Hills region, Hegyalja and several larger towns (Sopron, Bratislava) went into wine that was traded over longer distances, and wine for local sale generated substantial revenue for the villages around the town. The highest-rated wine, however, came from Syrmia. This was the region that provided the especially fine wines served on the table of the royal court. Some historical wine regions (like Tokaj) were already producing in the Middle Ages, but did not enjoy the fame they achieved in the modern age. Fruit growing was also very widespread, and even climatically unfavourable regions had some fruit trees, although they produced considerably smaller fruits than we are used to today. Fruit trees constituted part of the horticulture of nearly every village, although they were not necessarily grown in the form of orchards. Also of nutritional importance were vegetables, although sources on these are scarce. Often the only evidence that they were grown at all comes from expenditure items in account books.

The natural geographic features of the Carpathian Basin were also suited to rearing livestock on a large scale. The varied relief and hydrological features and the diversity of flora were capable of supporting many different forms of animal husbandry, and some of these were pursued simultaneously. Flood plain animal rearing, the keeping of livestock as an adjunct to intensive arable cultivation, sometimes involving a two- or three-field system, and extensive pastoral husbandry on land of low fertility were all characteristic of different areas. A form of grazing that was mainly confined to the eastern and northern highlands of the Carpathian Basin, was the movement of grazing herds between pastures at different levels as the seasons changed. The whole territory of medieval Hungary was always rich in wild animals, as frequently reported by foreign travellers, and there are also records of large-scale royal hunts. Nonetheless, wild animals were not a basic source of food in any century of the Middle Ages. The animal bones discovered in excavations of medieval villages and town houses include a negligible proportion of wild animal remains. Neither is there a substantial quantity in bones found at noble seats, castles or royal residences. The animal protein which was definitely predominant in medieval nutrition therefore fundamentally came from farmed animals, some of which also served as pack or draught animals. This permanent rearing of

large animals is confirmed by foreign travellers' descriptions of the wealth and abundance on display at livestock fairs. This was the economic function that underlay the significance of medieval Pest. The animal bone record shows greater and smaller fluctuations in the quantities of smaller animals (pigs, goats, sheep), but there were fairly large areas of forest for masting and more meagre pastures that could not support large animals, and so the rearing of these animals, too, can be traced continuously throughout the Middle Ages. There was, however, another source of nutrition whose significance was comparable to meat, and that was fish. The sources tell us much about fishing, but archaeological and historical zoology have fewer finds to work on, because fish remains are less likely to have survived and are more difficult to gather in excavations.

In summary, medieval Hungary had excellent resources for cultivation and animal rearing, supplemented by fishing on a substantial scale. This implies that all levels of society were generally well supplied with a good and varied diet. Contemporary sources hardly mention shortages of food, and there are records of famines only in extreme conditions (e.g. the Mongol invasion). Human bone records from archaeological excavations confirm this picture, showing few signs of deficiencies indicative of nutritional problems (tooth wear, articular problems, etc.). It can therefore be confidently stated that farming of crops and livestock provided food of satisfactory quantity and quality throughout the Middle Ages, for a population which grew steadily for long periods.

There were also climatic changes in Europe during the Middle Ages. These, together with phenomena that affected the population in other ways (e.g. epidemics), had a significant influence on agriculture and thus on the whole economic system. The climatic change which took hold in the 14th century, the "Little Ice Age", took its destructive effect most strongly on marginal lands under cultivation (at higher altitudes, or with low fertility) and, in combination with the rising population, caused food shortages and famine. When that periodic crisis of agriculture, the "Black Death", first struck heavily in the mid-14th century, it exacerbated the effect of climate change and caused severe economic problems in the western and southern parts of the continent. It does not, however, seem to have had such a severe effect in Central-Eastern Europe, and neither the Black Death nor the general adverse economic effects of the agrarian crisis can be detected in Hungary the 14th or 15th centuries. The extent of arable land, the agricultural techniques used on it, and the yields achieved, proved sufficient for the agricultural population to provide for both itself and the large urban or urban-like population that evolved in the late medieval period. Foreigners passing through Hungary at any time during the Middle Ages always mentioned the fertility and wealth of the land, even if the people or the more urban settlements seemed to them poorer than the people and towns of contemporary Western Europe. In terms of the agricultural techniques applied and the environmental conditions, however, Hungary at the time was no worse off than the western part of the continent at that time.

How medieval Hungarian agriculture developed

The first and most far-reaching phenomena in the development of Hungary's agriculture occurred immediately after the Conquest, as the Hungarians, having moved into the Carpathian Basin, completed their settlement and set up a dense network of agricultural villages. Although these phenomena lie outside the scope of this chapter, which concentrates on agrarian conditions of late medieval times, agriculture in the 14th and 15th centuries clearly preserved many of the aspects that took shape in that initial period. Earlier research frequently concluded that nomadic Hungarians coming from the East took a long time to settle, and that tilling the land was of little significance for the population of the 10th and 11th

centuries. The persistence of nomadism was the subject of a long dispute among historians, but combined studies of archaeological, botanical and animal-bone findings increasingly supported the view that few of the people could have been nomadic at that time. Instead, recent research sees the conquering Hungarians as a semi-nomadic people, and an substantial part of their lives, besides tending their herds, was taken up by the planting of crops. Settlement archaeologists have developed a similar picture. The view that medieval villages evolved from the winter residences of gradually-settling nomads cannot be convincingly maintained. Although the settlements of ordinary people at that time undoubtedly did not stay fixed for long periods, this is not a sign of nomadism, but follows from how people used the land and kept their animals at that time. A large proportion of the villages which formed during the Árpád Era, even the first half, existed throughout the Middle Ages and were sites of agricultural production. The great process of transformation at the end of the Árpád Era was in many respects rooted in the agricultural practices of the earlier period, even if they formed part of a completely different overall system. Excavations of Árpád Era villages show many of them to have comprised houses separated by considerable distances and by empty areas enclosed by ditches. These systems of ditches themselves made them suitable for alternate cultivation of crops, keeping the animals kept near the villages away from the grain or possibly from garden-like crops, and at other times acting as fences to keep a large number of livestock in one place. Thus the relatively high stubble left after harvesting the grain could be used for pasture, and the animals provided manure that maintained the fertility of the land. This does not mean any kind of regulated system of use of fields, or of leaving them fallow. Rather it was a permanent one-field tillage system, maintained until the land was exhausted, a process which the natural fertilisation of the animals kept could at most slow down. It is therefore not appropriate to think in terms of the later plot system of agricultural villages. There were at most household plots beside the houses, and they frequently changed their positions within the village, because the buildings did not remain habitable for a long time. The Hungarian word for "plot of land", *telek*, which may be found in written sources dating even from the first half of the Árpád Era, at that time meant land whose natural characteristics made it fertile (from *televényes* – humic, having satisfactory soil moisture), and its meaning gradually changed to that of *terra culta*, i.e. cultivated land. This shows that land with such good properties was increasingly brought under cultivation, so that after a time *telek* generally arose as a synonym for cultivated land. Such fertile, easily cultivable land, however, became so not only through its natural features. The process could be influenced by human action. Keeping animals on land fundamentally improved its fertility if the soil had suitable characteristics, manure rich in organic matter providing greatly improved conditions for crop growing. Consequently, keeping livestock (primarily cattle and horses) periodically in on place generated *terra fimata*, i.e. fertilised land, and after a while this meaning was also attached to the word *telek* in the charters. This well illustrates the change in the significance of cultivation and the nature of the land being tilled. As constantly-used arable land was exhausted, fields within the settlement had occasionally to be abandoned or changed over, and after a long time the whole settlement had to be relocated. The movement of villages, which laws of the late 11th century tried to inhibit, was the consequence of this distinctive form of land use. The problem was not the lack of land, but the fact that the villages wanted to move away from the village churches which were appearing in ever greater numbers after the adoption of Christianity, and thus endangered the economic base of the churches set up in the early parish system. The law banning removal should not, therefore, be seen as evidence of late nomadism, but the conflict between the land use system of a gradually-settling people, increasingly turning to growing crops, and the newly-formed church organisation. Around these stabilising – although perhaps still moving –

villages, were borders clearly marked by natural features or artificial signs recognised by the village communities and their neighbours, and increasingly set into official charters. Much of the land within the village boundary, however, was still not under cultivation, and the boundary often enclosed more than one settlement or embryonic settlement. The extent of land available and the large areas of unoccupied land meant that its value was not determined by its size, but the by the people who belonged to it, cultivated it, and were bound to its service.

The general predominance of animal husbandry in the first half of the Árpád Era is indisputable. The Gellért legend contains a reference which may be taken as illustrative of the general situation: Ajtony had innumerable livestock, "cattle", kept on the fields outside the village and watched over by herders, but there were also other animals kept in villages, in purpose-built byres. The latter have been identified in village excavations, and are not evidence of indoor animal husbandry; having only held a small proportion of the villagers' livestock, animals which for some reason were more important and valuable. They were built for some saddle-horses and those dairy animals which needed better protection, but there were also open pens surrounded by ditches which also served the purpose of keeping the animals together. Archaeologists have found remains of these in the inner parts of the villages, and a similar purpose was served by trench-based structures similar to the lean-to buildings recorded by ethnographers as being used by pastoralists. All of this implies that animal rearing developed a highly developed and complex structure involving very large herds. Indeed, livestock also served as a measure of value and wealth at the time, the "cow equivalent" being a generally-accepted unit of exchange in barter.

The constant transformation of agriculture in the Árpád Era was also driven by external influences which brought new techniques and caused it to become more intensive. In particular, it was external effects which speeded up the spread of arable farming and the growing of fruit and vegetables. Although there were several known factors – internal and external – involved in the development of the agricultural system in late-medieval peasant villages, the specific extent of each is still not clear. One of the earliest external influences was the appearance of Benedictine farming. The Benedictine Order, in line with its international prescriptions, set up complex estates on the land it was endowed with and introduced the most advanced farming techniques of the time. Intensive horticultural techniques appeared in the garden and vineyard which lay in the direct vicinity of the friary, tended by the monks themselves. Crops and herbs previously unknown in the area, certainly to the peasant people, also came in with the monks.. The servants of the monasteries, especially the largest Benedictine abbeys, frequently became specialised in particular areas of farming, although in addition to the product of their bonded labour they had to provide their own subsistence. In the 12th and 13th centuries, the Cistercian order brought an even more advanced form of monastic farming to Hungary, with manor-like estate centres which set up special sources of income to support the monastery, even though the Cistercians in Hungary did not engage in the activities of land improvement and colonisation.

The monastic estates certainly made a major contribution to the spread of fruit-growing and viniculture. Archaeobotanical studies have shown that despite the great movements and transformations stemming from migration of peoples, there were some elements remaining from the vine and fruit culture set up by the Romans. The adoption of Christianity and the spread of ecclesiastical estates also contributed to the spread of viniculture. The extent of villages whose inhabitants worked in the vineyards, and a comparison of contemporary data with historical ethnographic observations, suggest that vines were mostly grown up fruit trees in a kind of trellis arrangement in the early period, the new system of vineyard plantation only becoming common later. Fruit growing should not be

imagined as regularly laid-out monocultural orchards; it mainly involved single trees surrounded by other crops. Archaeological excavations of church estates even from that period, however, have found remains of artificially laid-out orchards where the trees were planted in holes dug at regular intervals.

In addition to clerical-monastic estates, another major external influence in the transformation of agriculture was the arrival of settler (*hospes*) peoples. They usually came from areas with more advanced agricultural techniques where a partial overpopulation occurred in the 12th and 13th centuries, and entire village communities took up the offer, on good terms, of settlement in other areas. Largely from German lands or neo-Latin language areas (*latini*), the settlers were guided by *sculteti* or *locatori* to particular regions and set up new kinds of villages, employing new systems of land use in the vicinity. Their arrival fitted into another significant development, the expansion of cultivated land. A substantial increase in the area of cultivated land is detectable in the second half of the 12th and particularly in the 13th. One consequence of this was more intensive settlement of the country's peripheral lands, and another the increase in cultivated area in the interior, partly by clearing forests in the highlands and partly by increasingly intensive use of land around the villages on the plain. The German (Saxon) people who came to the north of the country (Spiš) and to Transylvania brought both advanced agricultural techniques – in many cases involving a special, more highly regulated village structure – and craft skills that led towards the development of urban settlements, giving rise to a legal framework based on the *hospes* privileges. The appearance of new kinds of plough can also in some respects be linked to the settlers, because it was from this time that the slightly asymmetric plough, capable only of breaking the soil, gradually gave way to the larger, highly asymmetric plough which had iron components and turned the soil over. The new plough had a large coulter capable of breaking the surface of soil which had never, or only long before, been cultivated, and the oblique ploughshare, which cut deeper, turned over the top layer of soil to produce a real furrow. This resulted in much more intensive tillage and preparation of the soil, helping to raise the fertility of the land and better enabling new land to be broken and wasteland and fallow land to be reclaimed.

These types of plough required substantial draught power, but the main change was not from light to heavy plough, but in the plough type and its fabrication. The larger ploughshare and the plough's other iron components demanded a more complex wooden construction, of which a later development, eventually to become widespread, was the wheeled plough. Another major change was in the shape of the land being tilled. Long narrow selions, more suited to the new kind of plough, replaced what had mainly been small square fields. These permitted the plough and its draught animals to continue in one direction for a greater distance, leaving an uninterrupted and completely turned-over furrow, the plough having to be lifted and turned round only once, at the end of the tract. This plough type also allowed terrace-like tracts to be laid out on slightly-sloping hillsides, perpendicular to the slope, a technique widely used in forest clearances. Such cultivated terraces (lynchets) may be observed in many hilly areas of what was medieval Hungary (now Slovakia and Transylvania). Some of these may date from the 13th century, although they cannot yet be dated with precision. The surface traces of ridge-and-furrow ploughland detected on plain areas by landscape archaeological methods do not include any from this era; it is a form of cultivation which was confined to relatively small areas of the Carpathian Basin even in the modern age.

The new type of plough, definitely in use in the 13th century, and the more systematic way of regulating the land around the village brought in by the settlers, led to a new layout of village land. One aspect of this process, however, was an internal development not linked

solely to the arrival of the *hospes* peoples. It was a logical consequence of animal rearing that large herds kept by villagers on the plain, where the surrounding land was not covered in forest, were moved from place to place around the village to make best use of pasture. This rendered some land more suitable for cultivation, the animals trampling and grazing down the larger vegetation, thereby suppressing the weeds, and raising fertility with their manure. Land "converted into fields" in this way then became capable of supporting tillage. There is much evidence in the written sources of land around villages becoming agricultural plots which were given individual names like Kökényestelek or Páltelke, comprising the name of the owner (Kökényes, Pál) and *telek,* the word for plot. These plots constituted scattered farmstead-like settlements in the vicinity of the village. These little scattered settlements, seeds of villages, left remains in several areas which have been discovered by archaeologists. The division of the land around the village into plots could reach a level where the placing of the plots and their associated house plots (*sessio*) had to be regulated, because if they were too close together, their herds could cause damage to the tilled land of their neighbour. These regulatory measures, and the more systematic use of the land around the village by the settlers, supplemented by the sophisticated manor-like organisation of labour in certain monasteries, combined to produce the layout, land use and labour system of the peasant village that was distinctive of the following era. Another result of this process and complex of influences was the regular system of ley farming and fallowing, which ultimately led to the classic forms of this – the two- and three-field systems. These are recorded in sources from as early as the 13th century, but only became widespread in the 14th. The various environmental conditions and the size and nature of herds, however, also greatly influenced the local application of such systems in the closing years of the Middle Ages. Certainly, systematic fallowing and the new type of plough combined to promote the sowing of wheat, a higher grade of cereal than the millet it displaced, and more generally to enable higher yields from cultivated land. A clue to how these developments took place comes from the Hungarian word *nyomás,* meaning a field used in a system of two- or three-field rotation. It is the same as the word for "pressing" or "trampling", indicating that this was land which the animals had previously "trampled", i.e. fertilised and made fit for ploughing. Another Hungarian peculiarity is that the single word *telek* was used for both parts of the croft, i.e. both the toft and the plot on the outskirts of the village, so that the piece of land made fertile around the house and the land with similar properties around the village evolved as part of the same process; only when the land around the village was regulated into an open-field system were the two connected, based on possession and cultivation by the same family.

As more and more land was brought under tillage, and cultivation became more intensive, an opposing trend started up in the 13th century. The decline in population and destruction of villages caused by the Mongol invasion were most severe in the centre of the country, the Great Plain. Whole areas were left empty as a result, and it was here that Béla IV settled the Cumans (a smaller group of whom were located on the plains of Transdanubia). These settlers had large herds, and their way of life was closer to the semi-nomadic type than of Magyar villages, based primarily on arable cultivation. This was a constant source of friction in the area where Hungarian villages lay close to Cuman lands, because the free-ranging herds of large animals destroyed villagers' crops, and these differences in way of life were easily linked to the differing customs and pagan beliefs of the incomers. The formation of agricultural villages in Cuman lands was a very long process. Archaeological excavations (e.g. in Szentkirály) show that it went on for at least a century and a half.

The changes of the 13th century also affected other areas of food production. Some groups of the *hospes* population brought with them new vinicultural skills. Vineyards, which required more labour but yielded greater income, took up steadily greater areas through new

forest clearance or other means of rendering land fit for cultivation. This phenomenon was particularly marked among settlers from Latin-speaking areas. A major economic drive for this activity came from another development which was strongly linked to the appearance of *hospes* groups, the growth of early towns. The inhabitants of the new urban settlements presented a great demand for wine which had to be satisfied by the local markets, whose economic significance was steadily increasing. They in turn were supplied from by the steadily-expanding vineyards near Buda and Sopron, and the civil architecture of these town also bore the traces of this trade. Architectural archaeology and historic buildings research have found that distinctive house types in both towns evolved through the influence of pressing and processing grapes, storing large quantities of wine in cellars (Buda) and storing wine on the ground floor of buildings (Sopron). These urban settlements and their markets also drew in locally-grown fruit and vegetables, of which an ever-wider range has been revealed by the contents of filled-in wells in these towns, the remains of produce and seeds giving a good picture of the fruit which was consumed.

There were fewer changes in the structure of animal rearing during this time, although it was affected by the changing nature of tillage. Complex forms of farming evolved, affecting the land used for growing crops and keeping livestock (ley farming) and special land use in some regions. On the flood plains of the large rivers, in addition to ordinary flood plain farming, some areas were regulated by ditches to control the flow of water on to the land and hold it there, thus stabilising the soil moisture content, and permitting fishing, grazing and crop-growing at different times of year. This combined to raise the overall quantity of grain produced, as indicated by the rising population and the spread of water mills, which took on an increasingly central role in cereal processing.

Throughout the Árpád Era, in addition to continuously supplying the peasantry with sufficient food, the agricultural sector of the economy provided the basis for a rising number of urban settlements, especially in the second part of the period. The village population also managed to pay their tithes, the monastic estates provided for the ecclesiastical establishment, and – especially from the 12th and 13th centuries – more and more produce came into direct trade. Treasure finds dating from the Mongol invasion also prove that in the mid-13th century a large part of this trade in goods, which to a great extent was still based on agricultural produce, involved money transactions. This meant that freemen could be paid their denars, and monasteries, as their economic structure changed, could increasingly demand the services due to them in money. All of these economic changes were inevitably linked to equally far-reaching changes in society.

The late medieval agricultural economy, and research issues

The major technical advances in agriculture in the 13th century was associated by an even deeper socio-economic transformation. In the century or so following the Mongol invasion, the complex layers of status and obligation among the peasant population which had developed by the late Árpád Era changed into the single and more modern legal status of *iobagi* (tenant peasant). The final stage in the process was the law regulating the seigneurial tax (*kilenced,* Latin *nona*) of 1351, which shows that one of the fundamental obligations of the new social class was service to the landlord, and from that time on was always more or less associated with the church tithes, which had been in place since the Christian state was founded, and the frequently-changing state tax burden.

This was accompanied by a major changeround in the structure of towns and villages. The complex diversity of small villages gave way to a system of villages which had many things in common. Instead of tilling fields in the direct vicinity of the house, peasants were

concentrated into villages with a distinctive inner layout, and there arose an open-field system of inner and outer plots. Peasant houses were often arranged around the church and the neighbouring lord's mansion, and laid out in rows, with a long plot stretching out behind each house, perpendicular to the street. In the direct vicinity of the building were outbuildings and barns for animal fodder, very similar to what ethnographic researchers observed in modern-age village houses. The buildings were no longer single-room sunken houses, but mainly two- and three-room peasant houses built at ground level, with walls of varied construction. The basic types evolved in the first half of the 14th century, and developments of these persisted in village architecture right up to the early 20th century. Their evolution, as well as reflecting the technical developments in house-building, provides evidence of the economic base that permitted peasants to build houses with a larger and more refined living space than had previously been possible. So after doing their agricultural work and rendering their dues and services to the lord, they still had time, financial resources and building materials sufficient to erect such houses. The substantial outbuildings beside the houses prove that there were surpluses that needed storing, and are thus are also evidence of advances in agriculture. There was also more livestock, held in sunken pens or ground-level structures. In the early medieval period, more and more pigs were raised on what were basically cattle and horse farms, although their significance later dwindled. The proportion of small grazing animals also fluctuated somewhat over the same period. The area that constituted the kitchen garden, used for growing fruit and vegetables, also usually lay on the internal plot, behind the house. Most of the open-field area was under cultivation by that time, divided into furlongs which were in turn subdivided into strips. Peasants were allocated strips here and there in different parts of the field, either permanently or by drawing lots every year. Work on this land followed the regulated fallowing or two/three-field system, mostly involving cereals. Archaeological investigations of traces of cultivation have given us a way of envisioning this land by a means other than parallels with modern ethnographic findings. Traces of hillside terraces, for example, can show us where the selions were. One fortunate find is a unit of three roughly equal-sized terraces, which could have been used in a three-field system of rotation. The most recent finds of cultivation traces have even provided archaeologists with a relatively accurate picture of the type of plough that made them.

Besides the relatively regular system of outer plots, the land around the village included the lord's demesne with its cultivated fields and areas of meadow, pasture and forest which were fundamental to the life and needs of the village and most often used in common. Hayfields, important for provision of animal feed, may have been in individual possession in this period, and they took on a steadily-growing importance in line with developments in livestock rearing. This is borne out by the evolution of agricultural implements. The main harvest implement remained the sickle, of which there were several widespread types, but the straight-edged scythe also appeared, at that time a tool for making hay rather than harvesting.

There were also areas around the villages which lay outside the plot system and the lord's demesne. Important among these was the system of forest clearings. These were in many cases formed in a single large-scale clearing operation involving a kind of community action by the village, although piece-by-piece expansion of villages' cultivated land still continued. The clearings were of small area and did not have the comparative uniformity of furlongs and strip plots. Excavations of the medieval village of Sarvaly in Veszprém County have found an array of terrace-like fields in the vicinity of assorted sizes, suggesting forest clearance. The implements used for clearing and exploiting forests are a well-known part of medieval material culture, and have close ethnographic parallels. Reconstruction of the clearing process primarily relies on ethnographical observations.

Vineyards also lay outside the plot system, because they required much labour to establish and provided a return only in the long term, after the vines started to fruit. Nonetheless, there were vine slopes nearly everywhere, either on hills separate from the village or merely separated from other land. The main exceptions were in upland areas where vines would not grow. Possession of vineyards was not confined to peasants; in the late medieval period several wealthier burgers owned vineyards which provided them with revenue, and they employed hired workers to tend them. This is a relatively well documented area. In Buda, for example, the phases of viniculture may be traced from the start of work in spring through the summer hoeing to the autumn grape-picking. We also have a knowledge of pruning through archaeological finds of vine pruning knives. These vineyards created one of the most remunerative branches of agriculture at that time, and as well as the substantial local consumption, wine from several areas was also sold further afield.

The second most significant category of agricultural commodities in foreign trade was livestock. The rapidly-growing city populations of south Germany and Italy presented good markets for meat, and the relatively hardy cattle raised on the Hungarian Great Plain, which could withstand being driven long distances, were well placed to satisfy this demand. Exports on a large scale started in the 14th century and reached a peak in the 15th. This has left is marks in the town of Vác, for example, which lay on one of the main driving routes. Extensive herding and driving for long distances did not degrade the condition of the cattle, and its meat was always highly rated and sought-after in these regions. The size, and particularly the sturdiness of these cattle surpassed those of the livestock strains bred there, but the long-horned grey cattle cannot be said to have been the main breed among them.

Some pig-rearing also involved a lot of movement. Semi-wild pigs were sent out for masting in the forest during the autumn, thus gaining weight and becoming an important source of food during the winter slaughter season. These omnivorous pigs, however, may have thriven in areas other than those identified by ethnographic research. Flood plain areas could also have supplied them with sustenance, and in the marshy shallows they may even have eaten fish.

Animal protein from the plentiful and varied livestock was still supplemented to a significant degree by fish, for which many ways of catching them, and fisheries regulated by technical means, were widespread in this period. The late Middle Ages, then, was a time when every section of society had increasing access to varied sources of nutrition.

Revenue from agriculture, and agricultural products themselves, were also basic factors in the development of a special kind of settlement, the market town. Market towns grew up most densely on areas where the regional centres of trade in agricultural products – markets and fairs – were established. These functions were increasingly linked to crafts, and in a few cases the largest market towns took on the functions of fully-fledged towns in areas which lacked them. The economic base of such market towns probably also shifted strongly from agricultural activities towards crafts and long-distance trade. In the legal sense, market town inhabitants were “tenant peasants” obliged to serve the lord, but population concentration and complex economic functions led to an entrepreneurial class in market towns which, towards the end of the medieval period, gathered increasing strength and earned substantial income – primarily through trade in agricultural produce. Foremost among these were those involved in the long-distance livestock trade. Enterprise activity may also be detected among the village population, and some lords also moved towards the production of agricultural commodities. The same period also saw an intensifying economic stratification of the peasant population, resulting in increasing numbers of *inquilini*. Thus formed a section of society working increasingly as hired labourers, although the extent of this is strongly disputed among modern historians. All of these processes accelerated in the late 15th century

and caused major structural rearrangements in both the work of the peasant population and the system of rents and income of the lords. Many forms of production started up which lay closer to the structure of agriculture characteristic of the early modern age. This is the area where research into historical sources over the last decade has borne the most substantial results. The views on the rising numbers of *inquilini* previously widespread among historians have been proved to be unsustainable. At the same time, the section of the peasantry involved in the market economy must have generated significant revenue. That peasants of many kinds were producing agricultural output that permitted a substantial rise in the central tax burden is increasingly clear, even if they did employ various techniques to avoid paying it. The same process took effect on demesne farming and seigneurial rents, frequently causing severe conflicts between parties with differing roles in the economic system. It is not clear, however, how much these processes of structural transformation contributed to changes in farming techniques, open field use or the proportions of crops and livestock. These issues also suggest that we might rethink the causes of the 1514 peasant uprising, the most serious of its kind in medieval Hungary. Hungarian historians have long since moved on from the class-war oversimplifications and put forward somewhat more complex explanations. It is now possible, drawing on the results of recent findings in economic and social history, to detect in the background of these events structural problems which may well have included historic changes in agriculture. Another contribution to the elucidation of these issues could come from archaeological research into market towns, which has undergone a resurgence in recent decades. A reconstruction which incorporates the houses and agricultural implements found in the settlement and the nearby buildings and places for keeping livestock could have a considerable influence on the determination of these settlements' role in commodity production and the market economy. This could in many respects alter our views on the economic role of the Hungarian peasant people in the late medieval period, especially concerning the economically-significant changes to the ways they tilled their fields and raised their animals.

Medieval foreign trade of Hungary

Balázs Nagy

Sources on medieval foreign trade

Reconstructing the foreign trade of a medieval country is a highly complex task. It involves determining the composition, quantity and value of goods imported and exported, and several other factors falling outside the scope of economic history in the narrow sense. Where sources permit, determination of the origin of goods imported and exported, and of the consumers of imported goods can also be informative. A completely credible account would require data of a type and character that medieval states did not produce even in places where more written sources are available than in Hungary. Hungary is particularly unfortunate in terms of surviving written sources, and research in coming years is unlikely to unearth many more domestic documents than we have at present. This enhances the importance of studies of known sources through new lines of enquiry or new methods.

Most people living in medieval Hungary were peasants, who tilled the land and kept animals, the section of society that was entirely, or almost entirely, self-sufficient in both food and manufactures. This does not mean that the peasants lived in complete isolation from the exchange of goods provided by trade, or that they did not constitute a market for goods in trade. Nonetheless, this factor, which applied to medieval societies in general, largely determined the role of trade in economic life. The vast majority of goods and produce did not become commodities but were consumed locally shortly after their production; only a minority went to market locally or in the region. An even tinier number of peasants could have been involved in trading goods beyond the borders of the kingdom. Most goods that became commodities and changed hands via commercial channels went to market locally, or perhaps regionally, but certainly within the country. Imports and exports made up the smallest section of trade. One might then ask why economic historians anywhere should devote such attention to the history of trade in and out of Hungary. One reason is that such investigations can throw light on how a division of labour emerged among countries, and on the place of each country in that division of labour. The exploration of channels of foreign trade reveal much more than the goods that left the country and those that came in. It can give an impression of the strength of international links, the emergence of the technical means of transport, and on the distribution of customs stations. Merchants did more than buy and sell goods, they brought into the country news, information, books and new trading techniques, and took them on to other areas. It was not uncommon for a merchant to settle in the country for a while, and to marry and establish family contacts, thus integrating deeply into the society of his new place of residence. These bonds of kinship then formed a basis for further trading links.

Foreign trade, owing to the special nature of goods involved and their channels of movement, left more of a mark in medieval sources than other branches of the economy, such as agriculture. The customs duties levied on the traffic of goods in and out of the country formed a substantial proportion of sovereign revenues, and the customs registers recording them are particularly valuable as sources. Similarly, archaeologists take especial interest in objects of foreign origin because, through identification by archaeological methods, such finds give a special perspective on mapping out medieval trade routes.

Historians also find themselves addressing questions to which written sources, and the data derived from them, do not give satisfactory answers. One of these is the proportion of foreign to domestic trade; another is the foreign trade balance. Despite the many uncertainties in this area, we know that internal trade differed from foreign trade in several respects: luxury

items for a long time dominated in the composition of both exports and imports, and food, primary consumer articles and cheap goods only asserted themselves at a relatively late stage.

The history of Hungary's medieval foreign trade divides into clearly-distinguished chronological stages. In the Árpád Era up to the Mongol Invasion, almost nothing except luxury goods was either imported or exported. In this phase, the driving force of foreign trade was not the circulation of surplus agricultural and craft products, but the demand for luxury goods among the upper ranks of society. This picture is further confirmed by the nature of surviving sources. For the early period, we have to rely on scattered data in narrative sources to glean some details on foreign trade. These are of particular interest where archaeological finds can help to refine the picture. Only in very rare cases, however, do these sources permit quantitative or statistical findings, and only scattered mentions tell of goods that were exported or imported.

It was not only the trauma of the Mongol Invasion that set off a new era in the thirteenth century. Opportunities began to open up for the mass import of relatively cheap goods, such as the foreign pottery and knives that appeared in Hungary at that time. The root cause was a boom in Hungary's precious metal mining and, somewhat later, the incipient business of exporting livestock. These gave a broader section of the population the purchasing power to acquire "ordinary," less expensive imported items. Research into late medieval foreign trade also has a much wider base of material to work on. Written sources survive in much greater numbers, and the quality of data in charters, customs tariffs and, for the second half of the 15th century, foreign-trade customs-duty registers permit much more thorough reconstructions, if not sufficient to dispel every doubt. The mass occurrence of cheaper articles in archaeological finds is another important source of evidence. Further results for the late medieval period may be expected from systematic treatment of foreign archive material.

An understanding of Hungary's medieval foreign trade could fill out the picture that might be familiar from other – political or social-history – analyses. Árpád-era Hungary's links to international trade were relatively narrow and weak, but they extended in many directions, and those to the east – Constantinople and Kiev – were on an equal rank with those to the west. Late medieval Hungary was more firmly integrated into the European system of trading links, and its place in the international economic division of labour was among countries with links – either direct or through intermediaries – with nearly every significant economic region of Europe.

Early Hungarian foreign trade[495]

The first appearance of Hungarian goods in international markets is known of through several items of information from around the same time. The Russian annals *Povest' vremennyh let* state that in 969 Prince Syatoslav of Kiev said to his mother, Princess Olga, that he was going to stay in Pereyaslavec in the Danube delta, "because […] that is where all goods gather: gold from the Greeks, expensive clothes, wines and various fruits from Bohemia, and silver and horses from Ugor Land [Hungary] ."[496] The Jewish traveller Ibrāhīim Ibn Yaʿqūb, writing about Prague in 965, noted that Mohamedan, Jewish and Turkish (Hungarian) merchants from the land of the Turks (the Hungarians) arrived there with gold and Byzantine gold coins, and departed with "slaves, pewter and various furs".[497] There were also links and trading relations with Nordic peoples. Scandinavian-made swords have been found in graves from the time of the Hungarian Conquest, and Hungarian coins

[495] On early trade in general see Kubinyi 1996a, 60–65; Kubinyi 1996b 36–46, especially 38–41.
[496] Kristó 1999, 345–346.
[497] Kmoskó 2000, 242.

from the reign of Stephen I have turned up in Scandinavian lands.[498] These of course suggest more than just trading links. Weapons and money could have travelled far on marauding raids. Nonetheless, there are Hungarian Conquest-era archaeological finds which do confirm trading links in various directions. Clear evidence of this comes from Byzantine objects and jewellery buried as grave goods. The high-quality silver coins found in Hungary – dirhams – cannot have been brought home from raiding expeditions. Unlike coins of western or southern origin, they are much more likely to have arrived in the course of trade.

These archaeological finds point to trading links with different destinations, but do not contradict other information on the Kingdom of Hungary's foreign relations in the second half of the tenth century. The sources tell of a double bond, east and west, but the goods suggest that trade was mainly with the East. The 969 Perejaslavec mention is also one of the earliest records of Hungarian silver reaching a foreign market.[499] The abundance of silver in Hungary was also noted by a foreign traveller to the country. Abu-Hamid al-Garnati, who came to Hungary between 1150 and 1153, observed that its mountains "held much gold and silver".[500]

The armies of the Crusades passed through the country several times from the late eleventh century onwards, giving a substantial boost to foreign trade links and connecting the country into the system of European commercial relations. These campaigns brought to Hungary many people who would not have gone there otherwise. They discovered the goods produced in the kingdom and assessed which of them might be worth trading. In 1147, for example, Odo de Deogilo, chaplain to Louis VII of France, quite openly considered the potential for trade when he noted that "the treasures and wealth of the many lands of the Danube are gathered together in the famous Esztergom".[501] There are also references to foreign trade in other reports of the Crusades. Emperor Frederick Barbarossa passed through Hungary in 1189 and met King Béla III in Esztergom. The Hungarian king presented the German emperor with gifts that were almost certainly not made in the kingdom and must have got there via foreign merchants.[502] One was an ivory chair, whose raw material alone seems to identify it as a Byzantine import, and the scarlet-coloured carpet and sumptuous quilt must have come from similar sources. The recorder of the imperial visit, Arnold Lübecki, found the gifts particularly splendid. This may have been more than the customary politeness, and possibly implied that such goods, probably of eastern origin, were unusual or unfamiliar to an abbot from northern Germany. The Emperor also received from the Hungarian king a camel loaded with four precious gifts, and the King several times presented the crusading armies with gifts of flour and other food. These would of course have been needed by any army passing through the country, but the foreign image of Hungary became inextricably linked with abundance of food, a frequent theme in accounts by later travellers.

Among the commodities that made up early commercial traffic, slaves deserve a special mention. Abu-Hamid al-Garnati recorded the price of slaves in the mid-twelfth century.[503] A pretty slave girl fetched 10 denars. He bought for himself a concubine of his liking, who later bore him a child. During later campaigns, a slave-woman could be procured for 3 denars. The fall in price was no doubt due to abundance of supply. King Coloman's statutes promulgated at the turn of the eleventh and twelfth centuries (Coloman I. 74) prohibited Jews from selling Christian slaves. He also prohibited Hungarian slaves being sold abroad, making an exception only for foreign-speaking slaves who had come to the kingdom

[498] Györffy 1977, 107–108.
[499] Györffy 1984, 707–716, especially 714–716.
[500] Bolsakov and Mongajt 1985, 58.
[501] Szamota 1891, 25.
[502] Kristó and Makk 1981, 76–78.
[503] Bolsakov and Mongajt 1985, 58.

from abroad. The horse was an important export item even in the early Árpád era. Ladislas' statutes (Ladislas II. 15-17) put restrictions on horses being taken for sale abroad and even to the border marches. Such was the importance of the horse as a commodity that the sovereign tried to regulate and restrict its export. Customs tariffs from the turn of the twelfth and thirteenth centuries in Hainburg, a town now in Austria near the Hungarian border, lists the goods carried up and down the Danube. It records grain, leather, timber, wine, wax, fish, copper and salt, among other things, as passing through the customs station. A similar customs tariff of Stein mentions, in addition to these, cattle, sheep, pigs, honey, and various metals: copper, tin, lead and iron.[504] These goods almost certainly came from Hungary, it being the only place from which such a combination of goods could have been carried along the Danube.

One document from the reign of Béla III (1172-1196), now held in Paris, tells of the crown revenues of early Hungary, including customs income from foreign trade.[505] Although some doubts have been expressed of its genuineness, the document gives a plausible account of the composition of revenues. Its figures tell us that the King's portion of customs, tolls and markets made up 18% of his revenue. This included the trade of goods moving in and out of the kingdom.

In the early period, from the beginning up to the middle of the thirteenth century, the country's strongest foreign trade links to the west led through Vienna and Regensburg, and to the east towards the two Eastern European metropolises, Kiev and Constantinople. The Jewish traveller Benjamin of Tudela, mentions Hungarians as being among merchants who came to Constantinople in the period 1165-1173, along with Lombards, Italians, Spaniards and merchants from the East.[506] Regensburg had a special significance in trade in the Central-Eastern European region as early as the tenth century.[507] Lying on the Danube, it owed its economic rise to transit trade. Regensburg merchants were awarded privileges in Vienna in 1192, but that city was only one station on their eastward trade route, which took them all the way through Austria to Hungary. From there, they built up contacts all the way to the Russian lands. Among their most sought-after goods in the late twelfth and early 13th centuries were precious metals, especially silver. The staple right granted to Vienna in 1221 was aimed specifically at restricting Hungary's direct links with western markets and channelling its trade through the city's merchants. Vienna's staple right was renewed several times (1244, 1278, 1281), indicating that there was some obstruction and resistance to its enforcement. It only came into full effect in 1312.[508]

The thirteenth-century transformation

Several factors combined in the sweeping changes to Hungary's foreign trade relations in the thirteenth century. 1204, the year the Crusaders occupied Constantinople, may be regarded as the start of a new era. The formation of the Latin Empire and the Byzantine restoration under the Palaeologus dynasty (1267) did not restore the former eastern metropolis to its key position in the long-distance trade across the Mediterranean and Eastern Europe. It was the period when Venice, having taken control of the Fourth Crusade which occupied Constantinople, seized the Byzantine sphere of operation and became the economic and commercial centre of the region. No less influential was a military event some decades

[504] Kristó 1984, 1075.
[505] III. Béla emlékezete. 1981. 81–82. *Barta János – Barta Gábor*: III. Béla király jövedelmei: megjegyzések középkori uralkodóink bevételeiről. In: Századok, 127. (1993) 413–449.
[506] Spitzer and Komoróczy, 2003. 145–148.
[507] Bosl 1966.
[508] Szűcs 2002, 230.

later. In 1240, Batu Khan and his Mongol army occupied Kiev. This eliminated another key point of Hungary's wider foreign economic environment. These circumstances caused Hungary to move from the western periphery of the Eastern European economic region to what Jenő Szücs described as the zone of influence of the ascending West.[509]

An eloquent source on that transitional period is a list of goods which survives in Venice. It was written, probably around 1264, by somebody close to Stephen II of Hungary.[510] László Zolnay has established that this text lists the goods delivered to the young king's court and the cash loans extended to him, possibly in the hope of later repayment. We do not know whether this part of the transaction was fulfilled, i.e. whether the merchant and court supplier, Syr Wullam, recovered the money he had invested. The composition and origin of the goods sold by Syr Wullam, however, are highly revealing. They are without exception foreign-made luxuries, most of them textiles, from two clearly-distinguishable geographical regions. Syr Wullam supplied scarlet textiles made in the East and brought to Europe through Byzantine and Italian intermediaries. This region provided the velvet and the silk, and the jewels and gems were also most probably oriental. The other major economic zone identifiable as a source of the goods in Syr Wullam's list was Flanders, whose textile industry was in the ascendant in Western Europe. The product featured was broadcloth, above all the highest-quality and most expensive variety, made in Ghent. Also characteristic of the Hungarian economy of the time is the way consignments were paid for: the list of goods mentions payment only in silver and salt. It was primarily by these two commodities that Hungary at that time could compensate imports, which were mostly luxury goods destined for consumption of persons close to the court.

An interesting point of comparison is a document written only slightly later, the end of the thirteenth century. It is a list of goods from various lands which were landed at Bruges,[511] and mentions articles from Hungary and the kingdoms surrounding it. Wax, gold and unminted silver came to Flanders from Hungary. Imports from Bohemia and Poland were very similar to those from Hungary, although Bohemia also sent tin, and Poland squirrel and other furs, and copper. We know from other sources, however, that Poland had no major exports of precious metals or copper at that time, and it is probable that these minerals also came from Hungary. They were almost certainly mined in Upper Hungary, sent for processing north along the Vistula, and reached their destinations via the Baltic Sea and the North Sea. This would explain why they were regarded as being of Polish origin by the time they reached Flanders.

There are also some clearly-identifiable objects belonging to the material culture of the Árpád era which must have reached the country via foreign trade. Such were ecclesiastical and liturgical items, which reflect mission and church organisation as well as trading links: Byzantine and Kievan pectoral crosses and bronze items from the Rhine-Maas region (aquamaniles, bronze bowls, etc.). In the mid-thirteenth century, following the Mongol Invasion, a large quantity of Limoges enamel crosses came into the country, together with objects made by similar techniques, making up for the losses suffered in the pillaging of churches and monasteries. Archaeological excavations have also established the arrival of an increasing number of glass items to satisfy demand among high-ranking households in the late Árpád era. Most of these are of Venetian origin, although some of the earlier ones are oriental. Foreign-made pottery, by contrast, was not all for show. Excavations of settlements which had set out on the path of urban development have found many comparatively inexpensive items of tableware, used by lower-ranking sections of society: glazed pottery

[509] Szűcs 2002, 224.
[510] Huszti 1938, 737–770; Zolnay 1964, 79–114. Zolnay publishes the text in question as well. On later the debates around this issue: Székely 1968, 3–31, especially 4–6; Paulinyi 1972, 581–585; Szűcs 2002, 230–233.
[511] Höhlbaum and Kunze 1876–1896, III. 419. n. 1.

vessels, mainly Austrian-made, for storing beverages, indicating that imported goods of this kind were still largely owned by inhabitants.

Increasingly informative on Hungarian foreign trade from the thirteenth century onwards are customs registers, providing details not available anywhere else on both internal and external traffic. The "thirtieth" duty, which evolved into customs duty on foreign trade, was not collected at the national border but at customs stations in the interior. One of the most detailed customs tariffs was that of the Esztergom chapter. It went through several modifications during the thirteenth century, reaching its final form in 1288,[512] and preserves information going back to the early years of the century. The version from the reign of Andrew II mentions furs which merchants brought from Russia by wagon, and wine from Syrmia and elsewhere, some of it brought by residents of Esztergom, and some of it carried on to foreign markets in Bohemia. Exported goods included cattle. Entries from the middle of the thirteenth century (1255) include a wide range of imported textiles: coloured broadcloth, "scarlet" cloth, barchant made of linen and wool, and German broadcloth. The same section also mentions the Venetians' merchandise, which was charged duty uniformly without further distinction. These rules reappear in a diploma issued by King Ladislas IV in 1288 in response to complaints by the Esztergom chapter that Buda and Pest merchants were avoiding Esztergom customs and preferring to take their goods west towards Győr. The King prohibited the practice, and at the same time ordered merchants from Vienna, Regensburg and east of the Rhine to pay the same customs duty as merchants from beyond the Rhine and from France and Venice.

A good indicator of Esztergom's political and ecclesiastical significance, not to mention its wealth, is the information in Rogerius' *Carmen misarabile* records that there were wealthy Walloons and Lombards living in the city during the Mongol Invasion, influential citizens, "almost the lords of the city". During the Mongol siege, when they realised they could not defend the lower city, they "burnt endless quantities of valuable fabrics and clothes, killed the horses, and buried the gold in the ground".[513] These luxury goods were almost certainly of foreign origin. The Walloon and Lombard inhabitants, speakers of Latin languages, grew wealthy above all through foreign trade.

Foreign relations remained important in Esztergom even after the invasion. In 1272, a Ghent merchant acquired title to one burgher's vineyard in lieu of repayment of debt. László Zolnay has hypothesised that Rennerius's indebtedness could have been due to purchase of a large consignment of Ghent broadcloth, with the clear purpose of selling it in smaller amounts.[514]

The customs tariffs granted in 1209 and 1242 to Varaždin and Virovitica in Croatia, lying slightly south of the River Dráva, list goods intended for Germany, most of all live animals (horses, oxen, pigs).[515]

Foreign goods attained increasing prominence on the Hungarian market after the thirteenth century. They were no longer exclusively confined to the prestige consumption of the royal court, and appeared on the market throughout the kingdom, in increasing quantities. Good illustrations are the Ypres broadcloth registered at the customs station of Alzsolca in Borsod County in 1329, and the Ypres, Tournai and Huy broadcloth at the customs station of Tileagd in Bihor on its way to Transylvania in 1312.[516]

Broadcloth was one of the foremost commodities in medieval trade. From a modern viewpoint it is not immediately obvious why a fabric woven from wool and used mainly for

[512] Domanovszky 1916. New edition: Domanovszky 1979, 51–99, see especially 70–77; Weisz 2003, 973–981.
[513] Nagy 2003, 150.
[514] Zolnay 1964, 79–114, see especially 107–108; Székely 1968, 4–6.
[515] Kristó 1984, 1075–1076; Szűcs 2002, 259, 275.
[516] Székely 1968, 7–9.

upper garments should have had such significance in trade. The reason lies in the importance of clothing, and its material, colour and style, as the expression of an individual's status in medieval society. Broadcloth was the material of upper garments throughout medieval Europe, regardless of climatic conditions. Its raw material – wool sheared from sheep – was available nearly everywhere, but its manufacture involved several phases (scouring, carding, combing, spinning, dyeing, weaving, fulling, etc.). Although it could be, and was produced as a home craft by the women of the community, a much different result could be achieved through specialisation. This formed the basis of activity in regions which had access to the best quality raw material and could produce highly refined and thus very expensive broadcloth as luxury goods for export to distant destinations. Exports from different zones of the north-western European broadcloth industry reached Central European and Hungarian markets at different periods. We have already seen that products of the broadcloth-weaving towns of Flanders – Ghent, Tournai, Ypres and Bruges – gradually made their appearance in Hungary in the thirteenth century. This cloth arrived in other Central European markets – Bohemia and Moravia, Silesia and Poland – at about the same time. German towns, given their geographical advantage, provided most of the merchants who brought goods to Hungary from these distant lands. The same German towns produced broadcloth of their own, but given the activity of their merchants, they were presumably unable to match the quality of the Flemish product.[517]

Broadcloth weaving in a Dutch province to the east of Flanders, Brabant, gathered momentum somewhat later, in the fourteenth century. Brabant broadcloth first appeared in Hungary in the second half of the fourteenth century, principally from Leuven, Mechelen, Herentals, Thienen, and of course Brussels. The early fifteenth-century laws known as the Buda Statute Book mention many of these, so that Brabant broadcloth had a presence in law as well as commercial transactions.[518]

Late medieval foreign trade

Hungary's place in the European economic environment shifted decisively in the second half of the fourteenth century. The principal cause of this was the rise of precious metal production. Mining and precious metal production had started in the Árpád era, some of it based on panning for gold, and Hungarian silver had already come to wider European attention, particularly in Italy. Fourteenth century developments, however, dwarfed everything that had gone before. Between 1320 and 1350, Hungarian precious metal mining expanded several times over. This resulted from more effective exploitation of natural resources and deliberate measures by the crown to promote mining. Among the most important of these was the founding of mining towns and charters granting mining rights (e.g. to Kremnica in 1328) and the establishment of a new system of mine rent (*urbura*). By bringing in German miners from Kutná Hora (Kuttenberg) in Bohemia and granting to the newly-founded mining towns the same rights that Kutná Hora enjoyed, the crown also played a part in providing appropriate technical knowledge and expertise for Hungarian mining. King Charles Robert permitted landowners to keep a prescribed part of the precious metals extracted on their estates. The system introduced in 1327 let the landowner keep title to the land where precious metals were found, and assigned to him a third of the king's *urbura*. The same system, however, made sale of precious metals a royal monopoly. This laid the foundations for the golden florin, minted after 1325 on the Florentine pattern. The mining industry, especially gold and silver mining, prospered in regions along the River Garam, and

[517] Endrei 1989, passim and especially 123–132, 233.
[518] Székely 1968, 15–21; Blazovich and Schmidt 2001, cap. 424, 534–535.

in Špiš and Transylvania. Quantitative data for mid-fourteenth century precious metal output cannot be determined precisely, but according to some estimates, Hungary's gold production constituted the majority of European production – possibly up to 90%. The kingdom's total annual gold output must have been about 1500 kg or even more. An event that gives an impression of the abundance of Hungary's gold reserves was a journey to Italy by Queen Elizabeth, mother of Louis I (the Great) in 1343: she took with her more than 6.5 tonnes of silver and 5 tonnes of gold, as well as a large quantity of minted coins. The sudden appearance on the market of so much precious metal and money had severe economic consequences.[519]

The rise of Hungarian precious metal mining coincided with similar developments in Bohemia. There, the mining towns of Kutná Hora (Kuttenberg), Jihlava (Iglau) and Havlíčkův Brod (Německý Brod, Deutschbrod) brought the most silver to the surface. The minting of gold coins, too, started in Bohemia at the same time as in Hungary. The parallel late medieval development of these neighbouring areas – Hungary and Bohemia – had a far-reaching influence on the economic and commercial character of the region.

The term "crisis" crops up frequently in international literature on the economic history of the fourteenth century. It was a period of phenomena which brought radical and sometimes traumatic changes. The sources tell of a famine which struck several regions at once between 1315 and 1317, with a severity that contemporaries claimed had not been seen "in living memory".[520] From the descriptions, it is clear that the cause was an accumulation of bad weather conditions. Although some western sources suggest that Central Europe and Hungary were affected, with similarly devastating effects, the hypothesis is not supported by Hungarian documents.

Then in the middle of the fourteenth century, Europe suffered the severest blow in its history, the Black Death. The epidemic of 1347-1348 killed about a third of the continent's population, and recurred in several waves later in the century. Historians now agree that the drop in population caused by the Black Death was geographically uneven, some regions suffering far worse than others. Erik Fügedi's study of the Black Death in Hungary published in 1992 found that "there is every sign that the plague took fewer victims in Hungary than in Western Europe".[521] He put forward several hypotheses for the causes, one of them involving Hungary's geographical location, lacking a busy sea port and not lying on any major trade route. Hungary's relatively low population density, and the characteristically small numbers of inhabitants in its towns and cities, also served as obstacles to the spread of the Black Death. Other possible explanations have been proposed for Hungary's escape from the worst effects of the plague. The parasite was less able to spread in areas of dry climate, and Fügedi also mentioned the possibility that people of blood group B, a large proportion of the fourteenth-century Hungarian population, had some resistance to infection. Although none of the many hypotheses has proved to be a final and satisfactory explanation, the fact that Hungary and some other Central European countries were spared the worst demographic consequences of the plague seems certain.

The catastrophe for the population of much of Western Europe, however, had deep economic effects. There are surviving sources on prices and wages in England, Italy and other areas. These show that the price of agricultural products and land rent remained relatively low and even decreased as the number of consumers and the number of inhabitants of the area fell, but the price of paid labour and the price of manufactures involving such labour increased. The plague was therefore instrumental in the emergence of crisis phenomena in some parts of Western Europe in the mid-fourteenth century, but it is not true

[519] Johannes de Thurocz 1985, 162–163; Hóman 1917, 212–242, especially 225; Paulinyi 1972, 561–567.
[520] Szántó 2005, 135–142.
[521] Fügedi 1992, 30.

to say that there was a general crisis in Western Europe. Some areas were devastated economically, but others were in a phase of buoyant prosperity. One of these was the sphere of interest of the Hansa towns; Nuremberg and the towns of south Germany also strengthened their the economic role and amassed capital at that time. The same occurred in Central Europe. Bohemia, Poland and Hungary experienced an economic boom not unrelated to the accumulation of capital from their burgeoning extraction of precious metals. As Jenő Szűcs put it, "The *punctum saliens* of the West's recovery [from the crisis] was that the centre of gravity of the whole economic structure had irrevocably shifted to the towns by 1300, and of all the forces involved, the urban economy was the quickest to rise out of its own crisis (every section of society having been affected), not least because it found in Central-Eastern Europe opportunities for overcoming its market crisis and satisfying its demand for precious metals."[522] Accordingly, the changes occurring in the middle and late fourteenth century reinforced the division of labour among European economic regions and led to more intensive trading relations.

Several measures taken by Charles Robert tell us of the attention he paid to foreign trade relations. He granted free passage to foreign merchants travelling through the country, such as to that to the Venetian retailers (*institores*) crossing the River Száva in 1316, allowing them to travel freely throughout the kingdom if they paid the prescribed customs duties.[523] Two years later, Viennese merchants received a free passage. The staple right which Vienna enjoyed to the full by that time had a major effect on stimulating western trading links. The main trading routes to the north west were to Silesia via Zsolna and to Bohemia and Moravia via Trnava and Holič; the northern route to Cracow in Poland led through Kosiče and Špiš.[524] There were also busy national highways (*magna via, strata publica*) in other directions important for trade. To the south west, the Via Latinorum, the "Italians' road" passed through Körmend, another led to the southern counties via Barány. Other roads went to Transylvania and the south-eastern direction.[525] The latter were important land routes to the Levant. The healthy spice trade involving Transylvanian trading towns such as Brašov and Sibiu satisfied the majority of the kingdom's total demand. This trade was to a large part compensated by manufactures, broadcloth and fine metalware, some of them of Western origin, exported to Wallachia and Moldavia.

Charles Robert's foreign policy and shifting alliances also affected the foreign trade interests of the kingdom. In the 1310s, the centrepiece of his diplomatic system was an alliance with Frederick Habsburg, Prince of Austria, but this was subsequently downgraded as he sought connections with the Bohemian King John of Luxemburg. A meeting in Trnava in 1327 resulted in a marriage pact between the two dynasties and a commitment to an alliance against the Habsburgs. Several diplomatic meetings were held in 1335, partly to discuss foreign trade matters. Emissaries of the Hungarian, Bohemian and Polish kings met in Trenčin in August, and the monarchs themselves came together in Visegrád on the banks of the Danube in early November. The agreement between Charles Robert, John of Luxemburg and Casimir III regulated traffic along the trading routes to the north west: the route through Moravia and Bohemia was made the principal trading route from Hungary to the west, so as to avoid the effects of the Viennese staple right. A separate treaty signed in January 1336 clarified the details of the route on the basis of statements by Trnava and Brno burghers who knew and used it. The development of trade and the provision of satisfactory trading routes had thus become key issues of Central European politics by the middle of the fourteenth century. The many subsequent charters concerning the route to the north west prove its

[522] Szűcs 1983, 71.
[523] Pach 1990, 54.
[524] Pach 1990, 48.
[525] Szűcs 2002, 232, 265–266.

importance for merchants from the two neighbouring countries, as well as for those from many other, more distant lands. In 1344, merchants from Cologne and other Rhine towns, and from Huy on the Maas, received exemptions so that they would not have to pay higher customs duties than the Bohemians and Moravians, and *institores* from Cologne were granted the same in 1345.[526]

We can build up a relatively precise picture of the composition of late medieval exports and imports from a surviving ledger of the Pressburg "thirtieth" customs duty for the years 1457 and 1458.[527] The thirtieth was originally paid on trade within the kingdom (*tributum fori*), but under Charles Robert it became the source of crown revenue from foreign trade. Originally levied on imports, it was later also extended to imports. Paragraph 17 of the decree of 1405 defined the thirtieth as the general duty payable on goods taken across the border.[528] Initially, true to its name, it was set at 3.33% of the value of the goods, but in the middle of the fifteenth century the rate was changed, so that the "thirtieth" offices actually levied a duty of one twentieth of the value. The thirtieth provided the king with much of his revenue.

The Pressburg thirtieth, and by implication the balance of trade in medieval and early modern Hungary, have been strenuously debated issues in Hungarian historiography for many years. The 1457-1458 customs register has preserved a very peculiar picture of the structure of trade, because it implies that imports accounted for 89% of the total trade of goods.[529] It must be borne in mind, however, that the trade balance, whether in surplus or deficit, cannot be regarded as the only factor in a country's foreign trade. Even less so than for a modern country, because the sources on this period are highly fragmentary. Thirtieth registers, the primary references, are not sufficiently reliable to permit a full reconstruction of the traffic of goods. A comparative analysis of thirtieth registers from other years, such as 1542, modifies the extremely negative figure for the foreign trade balance for the middle of the fifteenth century. A large part of Hungarian exports to the west comprised cattle on the hoof, for which customs duty was not, or not only, payable in Pressburg, so their value is presumably not entered into the Pressburg customs registers.

Precious metal mining retained its influence on trade, but the yield of Hungarian mines, having burgeoned in the middle decades of the fourteenth century, perceptibly stagnated, and started to decrease in the early fifteenth century. Historians have come up with divergent estimates of precious metal yields, but the most accepted view for gold seems to be that from 3000 kg in the fourteenth century, the annual rate of extraction fell by half before the end of the fifteenth. Silver extraction followed a similar course in this period, falling from an annual level of 10,000 kg in the late fourteenth-century to half of that within a century.

It was just when precious metal production was in decline that the country's trade balance was increasingly influenced by other export items: livestock, particularly cattle, whose export was beginning and would later become big business, copper, other metals (iron) and wine. Hungarian cattle found markets in Venice, the south German towns and Silesia. Cattle could be driven on the hoof to such relatively nearby places, but to counteract the loss of weight caused by the vicissitudes of the journey, they had to be fattened up again before being taken to market and slaughtered. Hungarian cattle constituted a substantial part of the kingdom's foreign trade, and were also significant for the meat supply to some areas of

[526] Pach 1999, 231–277. no. 159; Nagy 1999, 347–356, especially 349.
[527] Kováts 1902.
[528] Pach 1999, 231–277. no. 224.
[529] Draskóczy 1996, 67.

Western Europe. When there was a downturn in the number of Hungarian cattle coming to market, the price of this meat rose in North Italy, Nuremberg and Austria.[530]

The merchants involved in foreign trade fell into two principal groups: south Germans and Italians, above all those from Florence. The foreign trade balance was almost certainly negative, i.e. imports surpassed exports. The goods at the top of the list of imports in terms of value were broadcloth and other textiles, followed by spices and metal implements. Knives constituted a segment of their own among late medieval Hungarian imports. Their manufacture involved expertise which was widespread in what is now Austria and south Germany, and these areas supplied Hungarian markets in quantities of the order of "millions".

Our knowledge of large-volume craft imports comes from documents and from other material-culture sources, particularly archaeological excavations. A great many knives, most of all from nearby Austrian lands, have been found even in village sites, and their place of manufacture is often clearly identifiable from characteristic handle designs and hallmarks. The latter are also found on other metal and pottery wares, and can be used to trace the sources of imports. There is also information on large quantities of craft products being exported from certain areas of Hungary. For example, the advanced craft industries of towns in Transylvania, especially Saxon towns, found markets in Moldova. Saxon-town product, however, are less represented in archaeological finds.

The most abundant archaeological evidence of foreign trade certainly comes from pottery fragments, largely identified as western imports. Stoneware, manufactured by special techniques in German potteries, spread throughout Europe. It was the material of tableware for high-ranking households (royal court, nobles, burghers), and its variety of forms and individual finishes also served as displays of position. Decorative pottery from Bohemia, "Lostice stoneware" filled a similar role. There was another category of foreign-made pottery, however, which found a place in less exalted households, even those of the urban poor, and the village population. The most distinctive examples of these are "Austrian ware" from several craft centres (e.g. Vienna and Tulln): cooking vessels whose high graphite content permitted them to withstand very high temperatures. These were marked on their rim, and made in a wide range of sizes. The same material was used to make graphite-containing crucibles essential for the work of goldsmiths and other metal workers.

The products of Austrian and German craft centres clearly came into the country in large quantities, and must have comprised more than just pottery, but unfortunately few other wares have survived at archaeological sites. We therefore have fewer of the pewter plates and bowls which were distinctive possessions of town households, and which must have come into the main Hungarian towns as articles of trade. Italian-made wares were present on markets alongside western craft products, but relatively few have been identified among archaeological finds. The domestic glass industry produced relatively low quality ware, and so there was a constant demand for the finest-quality Venetian glassware. Towards the end of the medieval period, some products of Italian potteries also appeared, such as Majolica tableware.

The overall evidence is that Hungary was connected with European system of trade through a broad range of imports and exports, but its foreign trade continued to be fundamentally based on the export of agricultural products and the import of manufactures.

[530] On the problem of cattle-trade Westermann 1979. In the volume see amongst others, the studies of Wolfgang von Stromer, Othmar Pickl and István N. Kiss.

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Seigneurial dues and taxation principles in late medieval Hungary

Árpád Nógrády

There is a widespread assumption among Hungarian historians that medieval taxes, and particularly seigneurial dues, nearly always meant an oppressive burden on the peasantry. It is not a recent view. It was first formulated in serious historiography during the Reform Age (Mihály Horváth), but the main points had long before been eloquently expressed by Gáspár Heltai in his fable *Egy nemesemberről meg az ördögről* (A nobleman and the devil).[531] The story is about a townsman of Cluj who, in league with the devil, perpetrates all kinds of manoeuvres to squeeze wealth out of the people of the land. Heltai was pillorying the exploitation of large estates in response to the sixteenth century price revolution, which had set off a boom in agriculture. His tale brings to life the landlord-controlled taverns which watered the wine, the butchers selling degraded meat, the tenant peasants who had to pay taxes on the nobleman's produce, the lord's cattle trade, and everything by which the nobility of the time "filled their hats with money":

Although Heltai's charge-sheet on the world around him was drawn up after Mohács, many items definitely applied to the late medieval period. For corroborating evidence we need look no further than the amounts entered for wine sales in the Szapolyai family's accounts. In the castle estates of Tokaj, Tállya, Szárd, Regéc and Boldogkő (and some other estates) in 1517, the family's income from wine was an enormous 2928 florins, at a time when the 1-florin royal tax amounted to "only" 1382 florins.[532] Also relevant is an instruction given by Palatine Imre Perényi in which he required his *provisor* in Ónod to foist upon a stonemason working in the castle an elderly toothless ox from the *allodium*, clearly as part of the mason's pay.[533]

However true the observations in Heltai's fable and the figures in the Szapolyai accounts, they must be set against frequent references in medieval documents to well-off tenant peasants and relatively high peasant day-labour rates, prompting in the reader the suspicion that not all of the medieval tenant peasantry could have lived "at the edge of utter ruination". It would therefore be very useful to determine the real magnitude of seigneurial dues and the principles by which they were levied.

The following analysis is a kind of snapshot, owing to the nature of the sources. We could hardly expect that seigneurial dues remained fixed throughout the kingdom over a period of several decades. Indeed they were probably subject to changes from year to year, and sometimes quite substantial changes. An illustration of what this could have meant is only available in an urban setting, for example through the fluctuations in purchasing power of the Prešov *Stadtknecht*s. An early accounts book from this town tells us, sometimes on a monthly basis, how the wages of town servants and the price of oats on the Prešov market varied over a period of eleven years, from 1443 to 1453. (The price of bread flour would of course be more relevant, but municipal accounts rarely recorded such figures at this time.) By comparing the two, we can follow the purchasing power of wages expressed in grain for a relatively long stretch of time.[534]

[531] Horváth 1868, 247–276., Heltai 1978, 222–234.
[532] MOL DL 26 161.
[533] „qui fuit antiquus bos et carebat dentibus" – MOL DL 26 173.
[534] MOL DF 282 530. In the cases marked with a start here is a one or two weeks gap between the wages and prices, the date always refer to the wages. The current rate of the denar was fluctuating significantly in the period studied thus the prices given in denar here can rather be compared only within particular years.

Date	Wages of town servants in denars	Price of one *cubulus* of oats in denars
05/07/1443	29.5	10
25/07/1443	29.5	12.5
10/08/1443	29.5	12.5
23/09/1443	34	18
05/03/1444	100	75.5
27/09/1444	40	40
25/10/1444	40	40
08/11/1444	50	40
15/11/1444	50	40.5
10/01/1445	50	46.5
17/01/1445	75	46.5
24/01/1445	75	46.5
07/02/1445	75	22
21/02/1445	75	22
14/03/1445	75	25
21/03/1445	75	29
11/04/1445	75	26*
18/04/1445	25	26
25/07/1445	27	9
03/10/1445	27	6.5
10/10/1445	27	6*
17/10/1445	27	6
31/10/1445	27	12
00/11/1445	27	8
19/12/1445	27	7
24/12/1445	27	7*
09/10/1446	40	8
21/01/1447	40	9
12/02/1447	50	9*
22/10/1447	50	10
24/12/1447	50	12
00/01/1448	50	12
18/02/1448	50	13
26/05/1448	50	25
29/09/1448	50	8*
04/02/1453	50	5.2

Fig 1 Weekly wages and the price of oats in Prešov

The table shows that town servants could buy nearly two cubuli of oats out of their weekly wages in September 1443, and only one in the year of the defeat at Varna. This number was three and a half in autumn 1445, five in October 1446, and the same a year later. There followed a period of plenty for the *Stadtknecht*s, when the value of their pay in terms of grain rose steadily for five years and reached 6-8 *cubulus* in the autumn and winter months. These account entries may of course reflect only a few years of exceptionally good harvests, and the full picture must take account of the wide seasonal

fluctuation in medieval grain prices.[535] Nonetheless, the figures show that even these darkest years of the times of trouble included a period of prosperity. The Prešov sources do not tell us when things took a turn for the worse.

There can be no doubt that such swings in income were also experienced by peasant households, but there is no way of proving it.

"Ordinary" seigneurial dues

The system of dues based on the independent peasant farm – what came to be known as the *sessio* – was first adopted in Hungary for the freemen (*hospites*) living on estates, and became general through the kingdom in the thirteenth century. It spread to the furthest points in the land under the Angevins. Tenant peasants (*iobagiones*) were assessed by unit of land, and their dues were set sometimes by contract, more usually by local common law. The predominant burden was payable in cash – the *census*. Its rate varied from county to county, from one area to another within a county, and even between neighbouring villages. Its amount ranged from a few denars to two or three florins, averaging one gold florin over the kingdom. It was set according to the size of the holding, which varied from village to village. Rates therefore only applied to single villages, and so data on the *census*, despite appearing similar, are not directly intercomparable. Peasants paid dues under different headings, in accordance to the annual rhythm of agriculture, at times set by common law. There were usually two instalments, one paid in spring, typically on St George's Day (24 April) and the second in autumn, on St Michael's Day (29 September) or St Martin's Day (11 November). In addition to cash, the peasant paid his lord in produce and labour.

Dues payable in food were much less significant in the fifteenth century than they had been in the early Árpád era. Peasants in many places redeemed them for cash, just as they did the fattened ox paid collectively by the village for the right to keep animals. The latter for the *iobagi* families along the River Rába, for example, meant an annual payment of two or three denars, about the price of a hen.

Labour service under the corvee system was insignificant at this time. Each peasant family had to give up at most two or three days work a year (mostly mowing and carriage), and even this was not taken up on many estates. It was quite common for corvee labour to resemble the modern concept of public works rather than enforced labour. The corvee of a village thus might be expended on maintaining the village's own bridge, or cleaning out the mill race.

Neither is it easy to assess the form of seigneurial dues known as the "ninth". It was introduced by Louis I in 1351, but never universally collected. There are places where we find no trace of the ninth. Elsewhere it was collected as prescribed, and other places it was nominally gathered, but of an amount that might more properly be called a "hundredth" .[536]

Extraordinary dues

In addition to the regular annual dues, landlords levied the *taxa extraordinaria*. Extraordinary seigneurial dues differed from the ordinary cash levy, the *census*, in two

[535] The prices were the lowest right after harvesting and in September and then – at least in Prešov and its neighborhood – started to raise until the end of the year. During the first months of the year the prices were stable and from April-May it started to increase rapidly and in these times they changed hands for two or three times as much as the prices at the market in September. See the data in two account books of the town of Prešov: MOL DF 282 535 and MOL DF 282 538.

[536] On the question in general see: Solymosi 1998 and Szabó 1975.

major respects. Firstly, the amount payable was not based on the holding but was proportional to the peasant's income, his "estimable wealth". Secondly, the lord – as is recorded in connection with a mortgaging-- as early as 1371 – could levy it, with or without proper grounds, as many times as he pleased.[537]

Known in German as *Steuer* and in Hungarian as *ostoradó* ("scourge tax"), the *taxa* became very widespread during the Sigismund era. István Szabó has made a very thorough study of it during the second half of the fifteenth century and the Jagiello era. First, through a (still-unique) analysis of one full *taxa* register (for the Baranyavár-Kórógy domain in 1469), he demonstrated the extremely complex hierarchy of peasant society at the time. Secondly, he found in documents for West Transdanubian dominions (Sárvár, Kapuvár, Léka) and the Ónod domain, evidence for an astonishingly high burden of dues paid by the peasantry. The amount levied in extraordinary dues was greater than the annual *census* by a factor of 25 in the Sárvár domain, 37 in Kapuvár, 18 in Sempte and 10-11 in Ónod. Szabó then drew the understandable inference that the Hungarian landlords' increasingly-frequent imposition of the *taxa* brought peasants to the limit of their capacities by the eve of the Battle of Mohács: "even if the peasant farms were not faced with it every year, a single levy could eat up the fruits of the labour of several years, even decades".[538] Indeed, he saw the seigneurial *taxa* as indicative of a burden which, together with the law binding peasants to the soil, was a tragic symptom of Hungarian peasant society descending into crisis.[539]

The *taxa extraordinaria*, however, was not purely a late medieval product. A royal charter of 1426 permitted it to be collected with annual regularity on the estates of the Bélháromkút Nunnery.[540] The exaction of the *taxa* in Sárvár and Kapuvár, a sum up to thirty times the *census*, although on average only 2-3 florins per taxable unit, was not at all exceptional. No better evidence of this is a register of levies from 1425 showing extremely high amounts paid in dues by peasants in the early fifteenth century.

The title of the register – *Registrum dicarum in Royche in anno vigesimo quinto* – is slightly misleading, the word *dica* suggesting a tax payable to the king, but the history of the country as a whole[541] and local events bring us to the unavoidable conclusion that this is in fact the earliest surviving register of seigneurial dues.[542] It concerns the area of Rovisce in Križevci County, now in Croatia, which had changed from a small castle domain into a noble domain in the second half of the fourteenth century. It passed into private hands in 1393 at a stroke of Sigismund's pen, the beneficiaries being Márton Ders of Szerdahely and his brother, members of a landowning family from Somogy, who were thus raised to lords of the castle of Topolovac and owners of a famously wealthy estate.[543]

Early evidence of this wealth is the register itself, which stands out for several reasons. Only single names are entered on the register, and amounts less than one florin are stated in an accounting currency equivalent to one fortieth of the current denar, the

[537] „taxam, censum seu descensum toties quoties sibi placuerit iuste et iniuste iuxta libitum sue voluntatis recipiendi et extorquendi … haberet facultatem" – MOL DL 5954., quoted by Mályusz 1965, 68.
[538] Szabó 1975, 73–75.
[539] Szabó 1975, 76.
[540] „singulis annis in taxarum seu collectarum extraordinariarum ... prefato fratri Nicolao abbati debitam obedientiam exhibere, ymmo talismodo taxas pecuniarias per ipsum super vos imponendi sibi absque contradiccione et recalcitracione aliquali extradare et persolvere modis omnibus debeatis" Nagy et al. 1865–1891, II. 239–240.
[541] As it is evident at the first sight this is not a *lucrum camarae* account and there is no information in the historiography that extraordinary royal due was demanded in 1425. Mályusz 1984, passim.
[542] MOL DL 25 929.
[543] MOL DL 33 468.

pensa, which had been common for several centuries in Hungary but was already obsolete[544]. Most relevant to the present discussion are the strikingly high sums demanded from households. The 407 village and market-town peasants named on the register, on eight estates, paid amounts in *dica* totalling 1531 florins, i.e. they had to come up with an average of 4 florins each. The individual amounts vary around this very high average through an enormous range. The highest sum, 25 florins, was collected from six people. Exactly one hundred persons paid more than average, and fourteen paid no more than 40 denars, or 1/8 of a florin at the current rate (1 florin = 300-320 denars).[545] These are impressive figures, unmatched by any in others rural medieval Hungary.

There are charters stating that two of the settlements listed, Rovisce and Virovitica, were market towns, even though the latter is first mentioned as an *oppidum* only in 1458 and sometimes occurs as a *possessio* even after that.[546] The remaining half-dozen settlements were villages of various sizes, although Zelán also had a customs post.[547] The main figures are shown on the following table:

Banicsevic	15	30.5	florins	2.03	florins
Besenevc	20	34.5	florins	1.725	florins
Dorozlouch	10	22.5	florins	2.225	florins
Stari Jankovci	48	278.8	florins	5.8	florins
Rovisce	192	738.5	florins	3.84	florins
Struga	11	36.5	florins	3.32	florins
Virovitica	73	249.0	florins	3.41	florins
Zela	38	141.5	florins	3.72	florins

Fig. 2

Towns/villages, numbers of taxpayers, total dues collected and average dues (in florins)

Only the *oppidum* of Rovisce, with 192 taxpayers, seems to have had any significance in the county, and it is remarkable that the size of a village, to judge from the average dues, had no bearing on its taxable capacity. The reason for this must be that many *oppida* inhabitants were poor, so that well-off villages were just as important to landowners as sources of revenue as market towns.

The register gives us a cross section of the estate's micro-society, dividing the population into no less than twenty-eight "tax bands". Those at the top (25 florins) paid 200 times as much as those at the bottom (40 denars), a much wider gap than is found in later documents of this kind.[548] A closer look at the percentage of *taxa*-payers in each "band" and the amount they paid reveals that the Szerdahelyis laid the lion's share of the burden on the shoulders of well-off tenant peasants. The six wealthiest *taxa* payers, paying 25 florins each, contributed nearly one tenth of the whole amount, the top 20%

[544] On *pensa* see: Engel 1990, 75–78. and 91.

The compiler of the register of course counted in forint. The fact that *pensa* was an important element of the register as a counting unit might be attributed partly to the divisibility by twenty and forty of the Golden forint – denar course and partly the setting of the lowest tax categories in 1/16th and 1/8th Golden forint.

[545] On the current rate, see: Mályusz 1984, 194. and Házi 1921–1943, II/2. 340–342. In the town of Sopron in 1426 the rate was between 273 and 300 denars. Exact account of 1425 is not known to us.

[546] As market town (*oppidum*): MOL DL 15 272 and MOL DL 15 274, as *possessio*: MOL DL 16 449 (1466) and MOL DL 32 851 (1473).

[547] Zela appears as a customs post in 1476: MOL DL 33 392.

[548] The difference indeed in 400 times as the lowest tax was 20 denars, that is 1/15 to 1/16 golden forint. With this amount of money only one of the taxpayers paid this thus I thought it is more realistic to count with 40 denars.

brought in more than half, while those paying less than one florin – one seventh of the population of the domain – contributed only 5% of the dues. The Rovisce *taxa* was thus clearly an income or wealth tax. We unfortunately do not know the rate, but the amounts seem impossibly high.

By comparison, the day-rate for a town carpenter at this time (1426) was 20 Viennese denars in Sopron, i.e. 1/9 of a florin, and that of an unqualified labourer in the same town was 7-10 denars. This means that the lowest Rovisce *taxa* was equal to a day's wages for a town artisan and two-three days' wages for a *Knecht*, which does not seem unreasonable. But what can we make of a 5-6 florin *taxa*, by no means the highest, equivalent to a fifth of the Sopron carpenter's wages for the whole year? The very highest level is not worth comparing to urban artisan income at all; it equals the price of about a dozen oxen, or the cost of building a minor mill.[549]

Was this a special one-off levy, or were these sums due every year? How did it compare with the financial capacity of peasants and market-townspeople in the early fifteenth century? So high are these amounts – such as the average *taxa* of 6 florins for Stari Jankovci – that any suggestion of regular payment might seem unrealistic. Nonetheless, there are several direct written references to the owners of the estate, the Szerdahelyis, collecting extraordinary dues on an annual basis.

Our first source of information on this is a set of documents giving a very strong suggestion of what preceded the *dica* register. They tell the story of how the *iobagiones castri* of the former Rovisce *comitatus* carried on a long and bitter struggle against their landlords, the Szerdahelyis. The feud sheds light on several issues of social history, the details of which cannot be gone into here, but one bone of contention between the new landlord and the *iobagiones castri* was Márton's imposition of dues several times those they had previously had to bear. The cash dues are described in some documents as *taxa* and others as *dica*. The Szerdahelyis demanded them from every one of their peasants, not only the *iobagiones castri*, and collected them with force if necessary. Not even the *oppidum* of Rovisce escaped this burden, although Ban Márton was prepared to make some concessions to his market town, and in compensation for the increased dues he assigned most fields of one castle estate and the wine hill of another *praedium* to the *civites* of the town. The town and the landlord having thus come to a settlement on the issue of seigneurial dues at the expense of the *iobagiones castri*, the shadow of conflict between them was lifted, and Márton even sought for his *civites* the right to hold a national fair. The situation changed radically in 1417 when Márton fell into Turkish captivity, and from then until 1421 a fierce struggle raged between the landowning family and the former *iobagiones castri*, a conflict eagerly joined by the market townspeople in pursuit of their own ends. Peace was restored to the estate only in 1422 when the Szerdahelyis, by royal authorisation, returned to the system of seigneurial dues designed by Márton, who had since died.[550]

The second report survives from somewhat late in the period, 1503, and tells of the private war fought two years previously between János Ernuszt of Csáktornya and the family of Dersfi Szerdahely. In an act of large-scale violent trespass, Ernuszt captured Topolovac itself, installed himself in the domain and started to enjoy its fruits as landlord. He did so in a somewhat peculiar manner. Although he plundered Topolovac in the customary fashion and emptied its fishponds, his men did not harass the peasant folk of the estate, did not rob travellers, and did not loot the national fair of Rovisce or the market of Keresztúr. They simply collected the customs duty and *tributum fori*, and of

[549] Wages: Házi 1921–1943, II/2. 313.; The cost of mill-construction (though from later times) is 28 forints: MOL DL 56 291.
[550] Nógrády 2001, 73–82.

course the Szerdahelyis' usual dues. We know that Ernuszt gained possession of the St George's and St Michael's Day *censi* and the 650-florin *taxa extraordinaria*, exacted on two occasions that year.[551]

Although the amount collected as *taxa* sixty-six years later was much less than the 1531 florins taken in the Sigismund era, the Jagiello-era example does seem to show that the practice of collecting the *taxa extraordinaria* every year on the Dersfis' Topolovac estates survived the struggle with the *iobagiones castri* and the Rovisce *oppidum.*

None of the documents, of course, prove directly and beyond doubt that the amounts entered in the 1425 register were collected at regular intervals. This is an unfortunate, but not completely unbridgeable gap. Since the basic question is the burden the *taxa* represented for the peasants of the estate, a quantitative determination of this burden will also address the question of regularity. But is such a quantitative determination possible?

Although medieval Hungary was a highly literate kingdom, no account or survey giving an itemised list of the entire income of a town or village has yet come to light, and nor is it likely to in future.[552] Nonetheless, there is one town for which we have an accurate record of annual income. This is the *oppidum* of Gönc in Abaúj County. According to a receipt, the town paid "seventh" tax amounting to no less than 1000 florins in 1387.[553] This tax, introduced by Sigismund to finance the war against the rebellious Horvátis, was levied on both peasants and townspeople. As its name implies, it had the fixed rate of one seventh of annual income.[554]

This means that the annual income of Gönc in 1387 was at least 7000 florins. In fact it must have been much more than this, because the people of Gönc had to supplement this amount in cash with 50 barrels of wine. The King waived this, however, and so we will also leave it out of the calculation. Another crucial item of information is the number of households in the Gönc. This may be obtained from the chamber's profit survey of Abaúj County in 1427: Gönc, part of the Bebek family's estate since 1391, is recorded as having 191 taxpayers.[555]

The average annual income of a household in Gönc in the first year of Sigismund's reign was thus thirty-seven florins. A substantial sum, and perhaps most importantly, not the result of indirect calculation. This leaves us with the question of whether the financial position of a major wine-producing and trading town of Abaúj County can be projected to a Slavonian *oppidum* with about the same number of taxpayers. The present author considers that it might. Indeed, Rovisce also had a considerable wine trade, and to judge from customs and market revenues of more than 100 florins in 1501, and the records of wealthy merchants (sometimes robbed, other times giving loans of up to 240 florins), it might have been even wealthier than Gönc.[556]

However shaky the basis of such a comparison, we can be fairly clear about the scale of incomes at the time, and see that the owner of the Slavonian estate may have been asking a lot, but not the impossible. The form of dues introduced by Ban Márton in

[551] On the occupation of Tapalóc and the damages caused: MOL DL 21 225.
[552] Similar registers of course were written and a register of this kind from the late 15th century was preserved in the archives of the chapter of Zagreb but it is far from referring to all elements of the farming of the peasantry and its measures are unknown I had to disregard from using it? MOL DF 256 598. (Chapter of Zagreb Nr. 29–16.)
[553] The "seventh" tax of Gönc: Nagy et al. 1872–1931., IV. 344.
[554] Cf. Mályusz 1984, 30.
[555] Engel 1989, 35.
[556] On the customs: MOL DL 21 225; loans: MOL DL 99 628; the sack of the merchants of Rovisce in 1417: MOL DL 10 971 and in 1488: MOL DL 19 409; the occupation of the customs of Rovisce in 1464: MOL DL 16 401.

the *oppidum* of Rovisce thus corresponds to an income tax of about 10%, the rate being lower for the poorest and higher for the wealthiest. The Szerdahelyis most probably collected it every year at that time.

Gönc and Rovisce were of course both wealthy market towns. Their position cannot be generalised to the kingdom as a whole. Let us now look at the situation in simple peasant villages.

It is in principle much more straightforward to determine the dues payable in a village, where affairs were much simpler than in a market town: all we need are the value of agricultural production, the number of farms, and the amount paid in dues. Such is the state of sources for the medieval Kingdom of Hungary, however, that at least one of these is always absent. Neither is it possible to derive the total value of the agricultural output of medieval Hungarian villages via a statistical approach, because the number of sources on animal husbandry, especially the herding of large animals, is less than would be required for a reliable sample. Despite all of these factors, the task of reconstructing the rate of appropriation need not be dismissed as hopeless if we are prepared to make a few compromises,.

The accounts book of the Pressburg chapter,[557] although subject to these limitations, includes enough entries to permit an estimate to be made for the half a dozen estates of that ecclesiastical body: Körmösd (now Jánovce), Farná and Tureň lying along the Čierna Voda river, Vlky, at the western end of Žitný ostrov island, and Trhová Hradská and Topoľníky in the middle of the island. Two brief aggregate records of the villages' grain tithes have survived for 1474 and 1479. Additionally, indeed almost uniquely, we know the number of taxpayers and the annual ordinary *census* of the villages, and also the amount of the *taxa extraordinaria* levied on their inhabitants.

Under the established custom of medieval Hungary, the chapter of St Martin's Church in Pressburg received the full tithe from its estates.[558] The figures in the brief record of dues thus do not have to be supplemented with the part of the tithe due to the Archbishop of Esztergom, and can be used directly to calculate the villages' grain production. There are of course plenty of unknown factors. Without knowing the yields, it has been necessary to work with threshing records and some accounting items from 1552, and to take the figure for the price of grain as the average on the Pressburg market rather than the prices it was sold at locally.[559] The number of taxpayers has also been arrived at indirectly, because the chapter *Liber proventuum* is a book of accounts and not an *urbarium*. These limitations, however, add up to no greater a difficulty than is faced everywhere else in medieval Hungarian economic history, and in relative terms, the sources for these few villages are outstandingly informative.

They permit the conclusion that the cash dues on the chapter's estates did not constitute a heavy burden on the peasants there. The *census* was equivalent to 3-5% of the pure grain income in nearly every case, inhabitants of three villages paying no more than 40 denars, and it seems that the chapter was also restrained in its application of the *taxa extraordinaria*. Such a light burden on the tenant peasants, relative to their income, is a remarkable phenomenon, an outstanding case being that of Trhová Hradská. It was clearly a wealthier village, and the chapter levied a higher amount – an average of more

[557] MOL DF 281 414. (Library of the Archiepiscopate, Esztergom, Liber proventuum 1472–1529.) (hereafter: PSzkv.)

[558] The account book of the chapter briefs us well. Holub 1929, 385. (The example of the diocese of Veszprém).

[559] The threshing records: MOL MKA Regesta decimarum (E 159) Pozsony county, at 1552. The threshing counted with the gauge of Trnava informs of rounded off 3 gauge/shock (that is 1.5 gauge/shock of Bratislava) of harvest.

than two florins per holding. Nonetheless, these dues were only just over 10% of the villagers' grain production, and since their income was boosted by animal husbandry, there is good reason to believe that the amount was equivalent to only 6-8% of the village's total income. Although Trhová Hradská was indubitably a wealthy village, its inhabitants were unlikely to have been all that better off than those living in other Žitný ostrov villages. This may be inferred partly from indirect data, because there are signs – if fragmentary – of prosperity in nearly every village on the island. More useful than such indirect data, however, is an examination of three villages belonging to the Counts of Szentgyörgy, the native lords of Pressburg County. Two of these villages, Hviezdoslavov and Nové Košariská, seem to have been far from average. Their income from cereals probably resulted from record yields on an area of exceptional fertility. Nonetheless, they are relevant here for two reasons. The bounteous harvests – the average per household being equivalent to the extraordinary yield in the Žitný ostrov village of Trnávka in 1568[560] – shows that the yields in one of the most fertile areas of the country at the peak of the sixteenth century agricultural boom were not unusual, and had precedents going back at least a hundred years. Secondly, the figures for seigneurial dues, despite being drawn from only three villages, reveal the state of a late medieval large estate, and the burdens imposed on peasants in other western Hungarian estates are unlikely to have been substantially different. Much more likely to have varied are the economic conditions prevailing in areas where fertility did not match that of Žitný ostrov.

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"We give thanks that we have such a beneficent lord and live in God's breadbasket," is how the peasants of the Gyula estate of György Brandenburgi, paying average dues of 3 florins a year, summarised their state on the eve of the Battle of Mohács.[561] The overall conclusion we can draw from the examples of Gönc, Rovisce and the Žitný ostrov villages is that seigneurial dues, even including the "notorious" *taxa extraordinaria*, and amounts of 2-4 florins per household, could not have deprived peasant farms of more than a tenth of their annual income, and the voice of the Gyula peasants, satisfied with their lot, must point to a similar situation. Set against this is a letter of the people (*tota communitas*) of Zselic, itemising their complaints against their landlord in the summer of 1427.[562] These were: severe *taxa*, frequent carriage, obstruction of forest use and the withdrawal of a previously-permitted pasture. Their case was not isolated, but does not mean we have been misled by the sources. The complaints, as is clear from the Zselic letter, do no more than document anomalies in the system. Indeed, what outraged the people of Zselic was not the *taxa* itself. What they complained about was that their lord not only levied the *taxa* but – unlike his predecessor (father) – demanded it to the full extent, i.e. was attempting to exert his power without *consensus*.

Our understanding of medieval seigneurial dues must be guided by the general truism that taxation, however intimately it is bound up with the economy, is really a question of power. The peasant did not, at least in principle, pay dues to his lord in return for use of the land.

"We must serve the lords because they protect us,"[563] are words put into the mouths of peasants in the south German statute book, the *Schwabenspiegel*, in 1275. It was a widely-held principle that the landlord afforded protection to all inhabitants of his estate, including his tenant peasants, and was due advice and assistance (*consilium et*

[560] In the settlement Vera Zimányi counts with an average harvest of about 153 quintal of wheat and oat. See: Pach 1985, III/1. 341–342.
[561] Wenzel 1857, 45. Cf. Bácskai 1967, 441.
[562] Nagy et al. 1872–1931. XII, 124–126.
[563] „Wir sullen den herrn darumbe dienen, daz si uns beschirmen." – quoted by Brunner 1942, 294.

auxilium) from his subjects. The "advice" of the knight took the form of military service, and that of the peasant the payment of dues. (*Consilium* was the primary service, and automatically implied assistance.) Hungarian charters contain few such references, but one such is a charter granting *hospes* privileges to the people of Bogdán in Veszprém County in 1275. The people of Bogdán would remain under the lordship of the new owner of the land, Saul's son Lőrinte, and would look to him for protection (*ab ipsoque sperantes protegi et ab omnibus defensari*); they would in principle pay their dues so that they could, under his protection, live on his land (*pro inhabitatione terre*).[564]

Enlightened by this, we may return to Gönc and the Žitný ostrov villages and compare their incomes with the taxes imposed in the Matthias era. Then, too, it seems that taxes rarely exceeded the 10% limit. In Gönc, for example, the single payment of the one-florin *subsidium* took 2.8% of income on average; in Hviezdoslavov the figure was about 1.5% in 1474, and in Nové Košarišká it was 2%. Cases of more severe taxation did occur even here: the one-forint crown tax accounted for about 7% of the cereals income in Vlky, for example. There can of course be no doubt that payment of the king's tax meant a considerably higher burden for a peasant family in Oravský or Lipto than for its counterpart on a farm in Žitný ostrov. Nonetheless, the case of Vlky seems to permit some generalisation. The village's income from cereals was actually quite low, about 15 florins per holding, an amount equivalent to the harvest of about 15 *hold*s at Pressburg prices. An income of one florin per hold does not seem to have been confined to Pressburg County. It must have been usual in Somogy, because the local peasants calculated the standing wheat at this rate.[565] Supplementing the income from crops were the returns on livestock and viniculture, suggesting that even the double or even triple levying of Matthias' *subsidium* cannot be regarded as a completely unrealistic tax,[566] although it was set according to the income of wealthier market towns and villages. To verify the scale of this estimate, we could draw on an example from contemporary France. In the most populous kingdom of medieval Europe, royal taxes accounted for 13% of agricultural production in 1482, and 6.5% in 1515.[567] This correspondence is not a mere coincidence. Late medieval Europe knew neither the modern state nor the tax burdens the modern age were to bring.

The modern-age changes came first to the more fortunately-placed western half of the continent. The power of the nobles, who were increasingly unable to fulfil their old functions, was gradually subordinated to the crown. By depriving his subjects of the rightful use of force (reducing it to self-defence in the narrow sense), the king thus took over the protective function of noble domains, and turned the kingdom into a state. For the greater security and freedom from arbitrary interference that ensued, however, his people paid a high price. First of all, the enormous financial demand generated by a state which took on many more functions than the old *regnum* placed an unprecedented burden on its population. Secondly, as the direct political power of the great estates was curtailed, their income-generating capacity became the focus of interest for their owners, and the new profit-oriented administration brought for the peasantry an age of much more burdensome dues and rents. The world of medieval lords demanding only a small proportion of people's incomes had come to an end.

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[564] Solymosi 1988, 230–231.
[565] Závodszky 1909–1922, II. 391. and 395.
[566] Fügedi 1982, 503–504.
[567] Le Roy Ladurie and Morineau 1977, I/2. 978–979.

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The medieval market town and its economy

István Petrovics

I. The market town in historiography

Historians used to regard the market town (*oppidum*) as an intermediate between a village and a real town, a form of urban settlement that had frozen at a certain stage of development and retained an essentially village character. Writing in 1927, Elemér Mályusz considered *oppida* to having acquired urban privileges without sufficient reason. He changed his view only in 1953, on the discovery that fourteenth century *oppida* were not a homogeneous set of village-like entities with town privileges, but stood at different levels of urban development and were instrumental in leading the peasants towards urban life. Jenő Szűcs still expressed reservations about market towns in 1955, seeing their spread and expansion as narrowing the market opportunities of "true towns" and ultimately contributing to a hypothesised halt in the development of Hungarian *civitates* in the late fifteenth century. By contrast, a positive evaluation of market towns emerged in a book by István Szabó and György Székely in the early 1960s, and the clearest elucidation of their distinguishing features was produced by Vera Bácskai in her monograph of 1965. Erik Fügedi introduced some new considerations to the study of *oppida* in the 1970s. Most importantly, he stressed the role played by landowners in the granting of privileges to market towns and in their emergence as centres of seigneurial domains. He also gave a definition of the *oppidum*: "market towns in the fourteenth century were places whose economic, administrative and, to a limited extent, judicial functions had an urban character, but fell short of true towns in all of these respects. They occupied categories of their own between villages and towns."[568]

This brief survey indicates the problems that have arisen in studying the history of medieval market towns. The areas of dispute have been concerned less with the economy of the market town than its definition and the assessment of its historical role. Recently, however, historians seem to have reached a consensus even on the latter two questions. This has to a large extent emerged from several major theoretical treatments and monographs on medieval market towns published in recent decades.

The basic problem with the definition was that the market town lacked even the kind of loose interpretation that István Werbőczy gave for the *civitas,* the "true town" in his Tripartitum: "*A city in fact is a great number of houses and streets, necessary walls and fortifications, privileged for a good and honest life*."[569]

The words denoting the market town – *oppidum* in Latin and *mezőváros* in Hungarian – presented problems of their own. Until the mid-fourteenth century, or more precisely 1351, the terms *civitas* and *oppidum* were not sharply distinguished. A law of 1351 exempted inhabitants of the *civitas*, i.e. a town surrounded by a wall, from payment of the *nona* or "ninth" tax.[570] Thereafter, *civitas* denoted a royal or episcopal town surrounded by a wall, and

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[568] On this, see: Kubinyi 2000, 8–10 and Bácskai 2002, 32–40.

[569] „Est autem civitas, domorum et vicorum pluralitas, moeniis, et praesidiis circumcincta necessariis, ad bene, honesteque vivendum privilegiata.". Bak, Banyó and Rady 2005, 388–389.

[570] „Preterea, ab omnibus jobagionibus nostris, aratoribus et vineas habentibus, in quibuslibet villis liberis ac etiam vduarnicalibus villis quocunque nomine vocatis ac reginalibus constitutis, exceptis civitatibus muratis, nonam partem omnium frugum suarum, et vinorum ipsorum exigi faciemus et domina regina exigi faciet; ac predicti barones et nobiles similiter ab omnibus aratoribus jobagionibus et vineas habentibus in quibuslibet possessionibus ipsorum existentibus nonam partem omnium frugum suarum et vinorum suorum eorum usibus exigant et recipiant." ("Furthermore, we and the lady queen will cause the ninth part of all their crops and vines to be exacted from all our tenant peasants holding ploughlands and vineyards in any free village of ours of whatever kind, and also in the udvarnok villages by whatever name they are known, and the villages of the

oppidum increasingly, if not exclusively, a town subject to the jurisdiction of the lord, and lacking a wall.[571] Some confusion arose from the word *mezőváros*, the Hungarian equivalent of *oppidum*. Since *mező* is the word for field, such a town was associated in the public mind with agriculture, and many historians made the same (erroneous) assumption. It is clear from early modern Hungarian-language sources that the significance of the prefix *mező* was as a distinction from the gated or enclosed town; it meant an "open" town, a town without a wall. So it was not agriculture that gave the *mezőváros* its name, although agricultural activity was undoubtedly a prominent part of life there.[572]

From the judicial point of view, the market town lacked the autonomy of the true town, because it was under the jurisdiction of its seigneur – the king, the queen, the church or the lord. This judicial distinction has a bearing on the definition, because much of the historical literature still calls any town under seigneurial jurisdiction a market town. This is only correct in the broader sense of the word, i.e. by the criterion of jurisdiction rather than the possession of walls. Strictly, only unfortified *oppida* can be called market towns, and walled episcopal seats and walled towns under the control of the king, queen or secular landlord, should more properly be termed seigneurial towns.[573]

Popular misconceptions regarding the number and location of market towns also persist today. Dezső Csánki produced what might be called the first "virtual list" of *civitates* and *oppida* in the Kingdom of Hungary. He put them in a joint category, and came up with an overall figure of 800-900. This was later shown to be unrealistically high, because it included any village which held an annual fair and any settlement mentioned even once as being an *oppidum*.[574] In 1927, Elemér Mályusz put the number of market towns in Hungary at 800; in 1961, Vera Bácksai produced an estimate of 750 market towns in the fifteenth century (omitting the areas of Transylvania, Slavonia and Croatia), and more recently, András Kubinyi proposed a number of around 500.[575] Even this lowest figure, considering that there were only about two and a half dozen royal towns in the kingdom, is striking evidence for a fact that historians only accepted after a long time, and with reservations: there were many more "towns" in Hungary than those legally designated as such. Seigneurial towns and some *oppida* have to be included among them.[576] Even contemporaries considered *oppida* to be towns, as may be inferred from an anonymous account of a journey written in spring 1308, *Descriptio Europae Orientalis*.[577] Added to this is the vernacular designation – *mezőváros* in Hungarian *mestečko* in Slovak; in Hungarian linguistic consciousness and Slovak historiography, they were definitely regarded as towns.[578]

The "only" question was how settlements economically qualifying as towns, but lacking the legal designation, could be distinguished from other seigneurial towns and *oppida*. Earlier attempts at this restricted the study to single features (e.g. terminology, presence of mendicant-order monasteries and hospitals, number of students at foreign universities.) A much more comprehensive approach was taken by András Kubinyi. He borrowed the

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queen, with the exception of the walled cities; and similarly the said barons and nobles should exact and take for their own use the ninth part of all their crops and vines from all tenant peasants holding ploughlands and vineyards on any of their estates.") Bak et al. 1992, 10–11.

[571] Ladányi 1977, 6–14. See also: Kubinyi 1987, I. 235–236.

[572] Szakály 1995, 13.

[573] It was András Kubinyi who drew attention to this problem. Since his results had been published the monographs and studies are referring to it more precisely.

[574] Csánki 1890–1913. Unfortunately we do not have any contemporary source that refers to what was conceived as a market town in the Middle Ages.

[575] Cf. Szakály 1995, 13 note 25, Bácskai 1965, 14–16, Engel, Kubinyi and Kristó 1998, 280.

[576] Engel, Kubinyi and Kristó 1998, 281. See also: Kubinyi 2000, 5–12.

[577] Gorka 1916, 1, 2–3, 43–45.

[578] Engel, Kristó and Kubinyi 1998, 280, Bácskai 2002, 29–30.

geographical method of central place theory and drew up a set of criteria (including administrative functions, number of guilds, transport intersections, markets and fairs) as the basis of a broad-based and much more reliable system.[579]

Of course determining the centrality scores of settlements in the medieval Kingdom of Hungary between 1200 and 1250 tells us little by itself; what is needed as a categorisation based on these scores. Kubinyi did this by adapting a Polish classification for the early 16th century. The resulting system divides central places into seven categories. The important central places for the present discussion are those which score at least 16 out of the maximum of 60 points. These fall into the categories: 1. first-class (main) towns (at least 41 centrality points); 2. secondary towns (31-40); 3. smaller towns and market towns having major urban functions (21-30); and 4. market towns with medium urban functions (16-20). In terms of the urban economic functions they performed, therefore, the seigneurial towns and *oppida* in the second, third and fourth categories all qualify as medieval "towns". For the same reason, we may leave out the market towns in the fifth, sixth and seventh categories, although some of those in the fifth (transitional) category probably scored low only because of insufficient data.[580]

> This gives a figure of 180-200 towns in the Kingdom of Hungary in the late Middle Ages, and most of these – some 150 – were *oppida* and seigneurial towns which did not have full civic freedoms. Plotted on the map, the *civitates*, together with the seigneurial towns and *oppida* which performed urban functions, show a relatively even and hierarchical pattern, convincingly refuting the old view of medieval Hungary as being "bereft of towns". It also refutes the view of the market town as phenomenon confined to the Great Hungarian Plain, although the larger and wealthier market towns were indeed concentrated in that part of the kingdom. It is as well to mention here that comparative urban history studies have shown the market town to be more than a Hungarian phenomenon: it occurred in German-speaking territory, above all Austria, involving the word *Markt*.[581]

Research into market towns has hitherto concentrated on the core area of the Kingdom of Hungary. Little is yet known of *oppida* in Croatia, Slavonia and Transylvania, owing to the preference of historians both in Hungary and neighbouring countries for research into royal free towns rather than *oppida*.[582]

Alongside the issue of geographical distribution is that of chronological variation of market towns. Vera Bácskai found that pre-1390 sources refer to a total of 50 market towns, usually using the words *civitas* and *oppidum* interchangeably. Their number increased by 249 between 1391 and 1440 and by a further 33 before 1490. Another 79 *oppida* appeared in charters by 1526.[583] Mályus's work had the effect of concentrating attention on developments in the fourteenth century, and Bácskai's on those in the fifteenth century. The only detailed study of the sixteenth century was by György Székely, who examined the issue of market towns in the first two decades in his analysis of the causes of the Dózsa peasant war.[584]

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[579] See the presentation of earlier attempts: C. Tóth 2004, 589–590, Kubinyi 2000, 10–15.
[580] Kubinyi 2000, 15–16.
[581] Engel, Kristó and Kubinyi 1998, 280–281, Kubinyi 2000, 11, 15–101.
[582] Szakály 1995, 13, 19. On the problem of market towns in Ţara Secuilor: Benkő, Demeter and Székely 1997. On the same issue in the Upper Hungarian (present day Slovakia) territories in the early modern times, see: Lengyel 2003, 79–85.
[583] Bácskai 1965, 15. It is a pity that unlike in the case of most *civitas* the letter of privilege of the *oppida* did not come down to us. Therefore the building up of chronology that lists the foundation and the multiplication of market towns can only be carried out based on the first mention of them as *oppida*. This is the right place to refer to the fact that in the 14th century most of the *oppida* in the 14th century were in the hands of the kings while in the 15th century most of the new market towns gain their privileges from landlords. According to Vera Bácskai at the end of the 15th century 80 % of the market towns belonged to landlords and 11% to the Church. See: Bácskai 2002, 31.
[584] Székely 1961.

Recently, research chiefly by Ferenc Szakály has proved that the sixteenth century was also a unique and significant period in the development of market towns. Another clear result of research is that the real era boundary for medieval market towns in Hungary is not 1526 or 1541, but the Long War.[585]

Investigation of the economic and agricultural life of market towns, despite the many results achieved, suffers from a basic lack of accurate information. One reason for this is that the level of literacy in *oppida* fell far short of that in the royal free towns, especially the *tárnok* towns (those with recourse to the court of the *camerarius*, the Lord Chief Treasurer), and another the catastrophic destruction of medieval sources, especially in the south of the kingdom. For market towns, the historian has no access to detailed information in municipal law books, account books, municipal accounts or tax registers, but has to be content with the often fragmentary or limited information available in *urbaria*, tithe registers and charters. As Ferenc Szakály was the first to point out, the gaps left by the lack of Christian sources and the paucity of information they contain, especially as regards the late medieval period, can be filled from Ottoman the *tahrir defter*s, the sanjak tax censuses. These were produced for the specific reason of recording every inhabited and uninhabited district within each sanjak, and – in the inhabited settlements – every household and the income to be expected from it. Despite the mass of information available from both Hungarian and Turkish tax censuses from between the first quarter and the end of the sixteenth century, Hungarian historians have until very recently shown almost no interest in them.[586]

Vera Bácskai's study of the market town economy reached the conclusion that craft industry and foreign trade should not be taken as the prime measures of urban development of medieval Hungarian settlements. In the conditions that prevailed in the kingdom, agricultural output and the internal trade of agricultural products[587] were also urbanising forces. This is not to downgrade craft industry, indeed Bácskai showed that the chief distinguishing feature of market towns was the interrelationship between commodity-producing agriculture and commodity-producing crafts, and market towns also played some part in foreign trade. The craft industries of *oppida*, however, were much less specialised than those of free royal towns, and they were mainly geared to serving everyday local and village needs. Nonetheless, guilds were well established in market towns in the fifteenth century.[588]

Bácksai also found that there were market towns in Transdanubia and the Lesser Hungarian Plain in the early 15th century which accommodated 10-17 different crafts, and that in mid-century the momentum of development of craft industries shifted to *oppida* in the centre of the kingdom and its and eastern periphery. There were more than ten crafts in nine towns, and there are records from the early 16th century of more than twenty in Gyula. We also know that sixteen *oppida* acquired exemption from external customs duty, thirty-one *oppida* had exemption from internal customs duty throughout the kingdom, and several dozen others had exemption within one or more counties. Then there were several hundred *oppida* which held annual fairs in addition to their weekly markets.[589] These research results also convincingly prove that many market towns' trading activity – unlike their craft industry –

[585] Szakály 1995, 14, Blazovich 1996. See the Introduction and the different entries of the volume.
[586] Szakály 1995, 14. Ferenc Maksay for example published in form of tables the tax-registers of 48 counties of Hungary and the Partium (Western-Romania) from the period between 1543 and 1561 (most of the data is from 1549) Maksay also drew attention to the known market towns from county to county: Maksay 1990.
[587] See the study of András Kubinyi in the present volume.
[588] Bácskai 1965, 23–61, Bácskai 2002, 35–37. It worth to draw attention to the fact that only few of the craftsmen of market towns seceded from the traditional forms of production. This might be the reason for the frequent presence of craftsmen in the local council of market towns unlike in the case of *civitates*. It was not rare that half or third of the most cases twelve sometimes six members of the councils were from amongst them.
[589] Bácskai 1965, 32–62 and Bácskai 2002, 36–37.

went beyond their narrow market zones, i.e. it was not confined to gathering surplus produce from the immediate environs.

Viniculture and animal husbandry have been clearly identified as central to the *oppidum* economy; arable produce was mainly consumed locally. Since vineyards and pastures did not form part of a tenant peasant's tenure, they were held on a freer basis than the land around the average village. Attempts to extend the town's ploughland and pasture by leasing or forcibly occupying land were a general phenomenon among *oppida*, even those with extensive fields of their own. By the nature of market town economy, the *oppidum* peasant-burghers traded primarily in wine, livestock, animal produce and coarse woollen cloth. Although they certainly had fewer merchants engaged in foreign trade and possibly less capital than their counterparts in the *civitates*, the differences between royal free towns and *oppida* seem to have been more quantitative than qualitative.[590]

Market towns in a strong economic position tended to pay their taxes and seigneurial dues in cash. Many of them paid their landlords in a lump sum, others by census imposed per head or other services redeemed in cash. Inhabitants of poorer *oppida*, however, paid their dues in the same way as the *iobagiones*. Unlike villages, market towns – particularly the larger ones – usually had broad powers of self-government. The economic and legal privileges and various concessions had great attractive power for the peasants, who were very keen to move to market towns. By the end of the fifteenth century about one fifth of peasants are estimated to have lived in market towns. Another distinctive feature of *oppidum* society was the large number of landless peasants (*inquilini*). It would be a mistake to regard *inquilini* as synonymous with "poor", because they also had the opportunity to rent land and engage in gainful activity other than agriculture.

Despite their flourishing economies, only a very few of the large market towns achieved full civic freedoms in the fifteenth and sixteenth centuries. The reasons for this unfortunate situation were mainly political. One was that the common habit among late medieval sovereigns if mortgaging their towns and *oppida* for quick financial gain. This was not due to a lack of appreciation of the towns' importance, but because of the treasury's pressing need for finance to defend the kingdom against the Ottomans. Towns were also granted outright to ecclesiastical and secular landlords so as to secure their loyalty in the rendering of services required for defence of the realm and other political purposes.

At the turn of the fifteenth and sixteenth centuries, several factors combined to interrupt the development of towns and market towns in Hungary. One of the most important was the restructuring of internal political power following the death of Matthias Corvinus. The lesser nobility used their new strength to force the passage of laws inhibiting central power and adversely affecting the towns. Act 47 of 1492, for example, required that *iobagiones* living on estates of the king, the queen, the barons and the nobles, except inhabitants of towns enclosed by a stone wall, were obliged to pay the ninth in produce. Under article 49 of the same law, the tenant peasant had to pay the ninth to his lands on other landlords' land, i.e. leased fields, as well as to his own landlord. This law adversely altered the relatively free conditions that had hitherto applied to possession of peasant and market-town land leases, and put *oppida* in a somewhat difficult position. Act 41 of 1498 withdrew the exemption on paying the ninth on rented land from inhabitants of *civitates*. This provision must have been difficult to enforce, however, because it had to be confirmed by Act 58 of 1514 and Act 27 of 1518. The 1498 law also set new rules for the tithe, one of which was that it should be paid in kind.

These laws went a long way to tighten peasant bondage, and also created the opportunity for the lords, by obtaining some of the peasants' saleable produce, to get involved

[590] Székely 1961, 309–341 and Bácskai 2002, 46.

in trade of agricultural produce. The clear proof of this is Act 35 of 1498, which informs us directly of trade by nobles. Another problem was the tying of the peasants to the soil following the Dózsa peasant war. The nobility attempted to stop peasants moving to market towns by withdrawing their freedom of movement.

Recent research has discovered that these laws and measures were, fortunately, only partially put into practice. One reason for this was that some landowners still saw it as to their advantage if their market towns kept paying their dues in cash. The abolition of peasants' right of movement also proved unfeasible, because the nobles themselves were divided on the issue, and the flood of refugees from the southern parts of the country under Ottoman attack could hardly be stemmed by mere laws.

Further adding to the woes of the *oppida* at the turn of the fifteenth and sixteenth centuries was competition from the true towns. This was partly the result of the discovery of America in 1492, which shifted trade routes to the Atlantic and opened up a much wider world market than had been known in medieval times. The sixteenth century also brought an agricultural boom to Europe: the demographic explosion in the west of the continent greatly increased the demand for food, and food prices shot up. This permitted a considerable increase in the imports of broadcloth and manufactures in exchange for the grain, wine and livestock exported to Western Europe. One consequence was to dampen development of craft industries in Hungarian *civitates*, already severely lagging behind their counterparts in Western European towns. The slump in craft industries, the fall-off in demand for Hungarian precious metals, and the unprecedented rise in the price of agricultural products turned the attention of even *civitas* burghers to viniculture and the wine trade, and to grain production.[591]

Overall, despite their economic and judicial disadvantage relative to the *civitates*, and the shackles which new laws granting trade preferences to the nobles put on their development at the turn of the fifteenth and sixteenth centuries, market towns in Hungary came out of the medieval period resilient and capable of adapting to the prevailing circumstances.

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[591] It is worth to emphasize that in the beginning of the 16th century 40% of the burghers of Sopron owned ploughland, 80% of the whole population and two third of the craftsmen had vineyards despite the fact that traditional forms of production except for of course the vine production has effaced. It is likely that the role of ploughland grew in case of towns in the borders of which cereals could have been cultivated. It seems to be reinforced by the example of Prešov where most of the burghers were also ploughland owners in the late 16th century. See: Bácskai 2002, 61.

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The monastic economy in medieval Hungary

Beatrix F. Romhányi

Monastic estates formed a special category of ecclesiastical holdings in the Middle Ages. It was customary even early in the period for some abbeys and provostries to receive donations of land, large and small, and in return to provide a last resting place for the donor and his family or at least help them on their way to everlasting life by prayer and the saying of mass. The monastic economy in the narrow sense thus means the running of estates by monastic (Benedictine, Cistercian, Premonstratensian, etc.) and eremitic (Carthusian, Pauline and Augustine) orders and by communities of nuns. Even the mendicant orders, however, which had had no landed estates, engaged in some activities belonging to the monastic economy.

Although the estates granted to the medieval church were in principle inalienable, and the property of an extinct institution could only be passed on to another church body, secular nobles regularly intervened in the economy of monastic estates throughout the period, first via the *Eigenkirche* system and later by seigneurial right, and often used estate revenues for their own purposes. These practices bore most heavily on Benedictine abbeys, which lacked a central organisation. The hierarchical structure of the reform orders founded after the turn of the eleventh and twelfth centuries gave them some protection from this kind of interference, although not complete immunity, at least during the Middle Ages.

Another point to consider is that the economic pursuits of individual orders went through changes with time. Over the centuries, the monastic economy had to adapt to economic developments in Europe and the changing environment in Hungary.

Sources, research issues and methods

An overriding feature of sources on monasteries and friaries in Hungary is their concern with property and economic activity. Historians first noted this at the turn of the nineteenth and twentieth centuries, regretting the lack of the kind of sources on the internal life of monasteries that are well known in Western Europe. Nonetheless, it may be surprising to learn that there has as yet been no systematic analysis of the sources we do have. One reason is that there is hardly a single monastery whose documents have not suffered serious damage. Most of the surviving documents concern the estates themselves and the associated legal actions and acts of violence committed against them. There are only a few scattered surviving account books, *urbaria* and other sources telling of economic affairs. The main sources are documents of monasteries which were places of authentication (*loca credibilia*). Even though the *loca credibilia* documents of a monastery concern matters unrelated to the issuing institution itself, they sometimes contain information useful to the economic historian, mostly concerning income related with place-of-authentication activity. There is also good evidence that Benedictine and Premonstratensian monasteries had a better chance of survival in the late Middle Ages if they were also places of authentication, a function providing a more stable economic base and a healthy system of social contacts. The converse is also true: the monasteries permitted by Louis I to continue as places of authentication were those whose large estates, and thus stable economies, made them less vulnerable to influence.

It is clear that such sources do not permit a coherent economic history of each monastery to be written. Studies most frequently involve the estate accounts, and sometimes the history of possession. Such work has been done for nearly every major monastery, mostly in the late nineteenth and early twentieth centuries by eminent religious order historians. The history of the Pannonhalma order still stands as a model. These source publications, produced in the positivist spirit, are still one of the most important points of reference for historians.

Research was interrupted during the First World War and the following years, but there were further substantial developments from the mid-1920s onwards. Besides source publications, there appeared the first attempt at a treatment of the monastic economy: Elek Kalász's book covered the estate affairs of the Cistercian monastery at Szentgotthárd and the economy of the wider order in Hungary. The section on the estates is still useful, but the findings on the economy must be handled with care, because Kalász made up for the scarcity of Hungarian sources through the use of Western European and French documents and the order's instructions concerning material affairs. We will return to these difficulties in the discussion of research today and its problems.

The post-war period, for well-known ideological reasons, brought another gap in the writing of ecclesiastical history in general, including that of monastic estates and their economy. In the meantime, treatment of Western European sources continued steadily, and there were great steps forward in methodology. Monographs on the history of monastic orders written in the years following the war only became available to Hungarian researchers after a considerable delay.

One peculiarity of affairs in Hungary is that in the second half of the 1950s, research in this area was relieved of some official restrictions, it was mainly taken up by archaeologists and historic building researchers. The opening work in this period was a book by the Premonstratensian F. Arisztid Oszvald on the Premonstratensian provostries of Árpád-era Hungary. In the decades which followed, archaeologists, art historians and architectural historians investigated a great many monasteries. Although this research did not venture into issues of economic history, much of the data it produced on the history of construction and on the buildings themselves – especially (sadly rarely-excavated) barns and outbuildings – has definite economic relevance. Work on publishing sources also revived at that time, if under peculiar circumstances: the Art History Research Group of the Hungarian Academy of Sciences published the medieval and early-modern written documents of the Paulist order, under the title *Documenta Artis Paulinorum*, in three stencilled-manuscript volumes. Another section of the data was disseminated outside the sphere of ecclesiastical history, in books on the historical geography of the Árpád era.

The next revival in ecclesiastical history started around 1980. The symbolic opening move was the publication of a book by the Benedictine monk Lajos J. Csóka on the history of the Benedictines in Hungary. Although the subject was Hungarian, the place of publication was Munich. A similar route was followed a few years later by the repertorium of documents of Cistercian abbeys in Hungary by the Cistercian F. Levente Hervay, which was published in Rome. Reflecting the official thaw, there was an upsurge in ecclesiastical history publications, particularly by the Catholic Church. This was followed immediately after the political transition by the publication in Hungarian of Lajos Lékai's book, originally appearing in English, on the history of the Cistercian order in Hungary, with an additional chapter by F. Levente Hervay. In the same period, Zsuzsa Bándi produced two source publications on Paulist-order documents from north-east Hungary and Szakács (Somogy County) .

The political transition heralded a resurgence in the writing of ecclesiastical history, also reflected through some major exhibitions and conferences. This large-scale ventures – partly by their nature – concentrated on buildings and physical relics, but all of the catalogues and conference proceedings included chapters on monastic estate management and related documents. Notable developments were maps showing the extent of monastic lands and the estates of the larger abbeys, the latter containing references to land use and management of property. Éva Knapp introduced some new aspects of methodology in her study of the Pécs episcopate's relationships with the Paulist friaries of Baranya.

In the 1990s, a new generation of historians – to which the present author belongs – began to take up some previously neglected or forgotten areas of ecclesiastical history. Their

work has included the modern historical treatment of hospitaller and knight orders in Hungary, the social situation and education of the common priests and the middle clergy, and increasingly, the monastic economy The latter theme has also taken on new currency in Western Europe, extending beyond the usual monastic context to embrace the mendicant orders.

Besides the publications of documentary sources of specific orders, a great deal of information on monastic estates, some touching on their economic affairs, has become available in diverse archives, works of historical geography, and – most recently – the digital version of the entire medieval document collection of the Hungarian National Archive. The latter is significant because it has put on to the internet fifteenth and sixteenth documents which have hitherto hardly been accessible even in printed form, creating new opportunities for research. The programme has continued to open up access to the *Urbaria et Conscriptiones* documents. The importance of the latter sources, mostly from after 1526, cannot be emphasised enough, because they also offer information on medieval affairs, especially concerning the estates of mendicant houses.

Finally, the results of archaeological research form a completely different category of sources, although we have already mentioned them in the discussion of historical studies. Archaeology has shed new light on the economy of specific monasteries and indeed of whole orders. Landscape archaeology, since its beginnings in England, has substantially revised our picture of the monastic landscape and the economic affairs on it. The exploration of the land use of certain monasteries and the monastic topography of larger regions or the kingdom as a whole have shed light on economic questions such as the complementary exploitation of sources of income. Although these methods have appeared in Hungarian research in recent decades, they cannot be described as widespread. Archaeological excavations have traditionally concentrated on the complex of buildings comprising the monastery in the narrow sense, with the main emphasis being on the church. As a result, we only rarely find excavations of buildings concerned with agriculture and trade. Even rarer is any survey of other structures (fishponds, millraces, irrigation systems, traces of surrounding land use. In the almost total absence of written information on these, the monastery activities they represent can only be studied by archaeological excavation or field survey, which underlines the importance of such work.

The work done to date – source publications, archaeological and historic-building research – has already produced a wealth of data. What have been lacking until now, are published studies focusing expressly on the monastic economy in Hungary. One reason is the methodological challenge arising from the unevenness of the source material. It is also true, however, and a sufficient explanation in itself for the decades following the Second World War, that the subject has aroused little interest. It was perhaps a little too materialistic for ecclesiastical historians, and too clerical for economic historians. A common feature of whatever studies have been published is that they present a static picture, a kind of snapshot of the holdings of one house or one order. Given the current state of research, this could hardly be otherwise, but we should be clear about where we stand. A fortunate development of recent years is the upsurge in research on land use issues, with results that can supplement many aspects of what we know on the monastic economy from written sources.

The Benedictine economy

In terms of the economic affairs, or more precisely land use and estate history, the Benedictines in Hungary have been studied longer and more thoroughly than any other religious order. This is not just because Benedictine abbeys were founded first (at the turn of the tenth and eleventh centuries) and the order remained the most widespread during the

Árpád era. The largest monasteries, founded by the crown, such as Pannonhalma, Pécsvárad and Garamszentbenedek, were among the largest ecclesiastical landowners in Hungary right to the end of the Middle Ages, and the evidence clearly demonstrates that they strove to apply the most advanced principles of agriculture. The most fully covered period of their history in this respect is the twelfth and thirteenth centuries, when they changed over from an economy based purely on transfers in kind, basically obligations of produce from various servant folk, to monetary transactions.

Like the abbeys themselves, Árpád-era Benedictine estates varied widely in size. Research is effectively restricted to the royal abbeys, the others only being referred to in one or two, mostly later, sources. From the findings on the most thoroughly-studied houses of Pannonhalma and Garamszentbenedek, we know that the estates of the great royal abbeys lay somewhat far from the abbeys themselves, in separate blocks, ensuring that the monks were supplied with food and raw materials throughout the year. One group of estates – usually the largest – lay around the abbey. Documents show that these lands, understandably, had a greater tendency to remain intact throughout the centuries than any of the others (as attested to, for example, by a comparison of the eleventh- and thirteenth-century censuses of the Pannonhalma estates). The agriculture of the great abbeys in the eleventh and twelfth centuries was based on a system of servant villages. According to Albeus's survey of Pannonhalma Abbey around 1238, the abbey had more than ninety villages in ten counties, in which the population was recorded mostly by the service they provided rather than social standing (2243 households). The servant folk bore diverse obligations of service: stewards, ploughmen, vineyardists, blacksmiths (who had the right to draw raw material each year from the royal iron stores in Vasvár), equerries, fishermen, bee-keepers and various church functionaries (*kápolnavivők*, bell-ringers, *torlók*). Some of the servant folk worked (at least partly) in the monastery, and they also provided most of the workers in the monastic workshops. About 26% of the lands lay within a 25 km radius of the abbey hill, and nearly half of the servant population lived there. There were two other major blocks of land apart from the central estate: one north of the Danube, Salaföld (Deáki) and environs, along the River Vág, and the other north-west of Pécs, the 300-household Zselicerdő. The other estates were widely scattered, and two of them were on the Great Plain. Mills were recorded at twenty different places on the abbey estates, and constituted one of the major sources of income. Other notable possessions of the abbey during the Árpád era were ferry tolls and market excise duties.

This scattered estate structure in fact caused one of the greatest problems in the thirteenth century, particularly after the Mongol Invasion. Garamszentbenedek, for example, was obliged to enter a ten-year legal action for its remote estates beyond the River Tisza, a fight which it ultimately lost. In addition to agriculture, the Benedictine abbeys had possession of various tolls and customs duties from the late eleventh century (some of them donated by St Ladislaus), and in the early thirteenth century had a very substantial share of the salt trade. The 1233 settlement of Bereg granted a share of the Transylvanian salt trade to the Benedictine abbeys beside the River Maros, and even to distant Pannonhalma Abbey.

The abbey estates introduced various agricultural improvements, and were also instrumental in the appearance and development of markets. There were even examples of a market town emerging in the direct vicinity of the abbey (such as Pécsvárad and Báta). Unlike some parts of Western Europe, however, the Benedictine abbeys did not in general become prime movers of urbanisation.

In the years following the Mongol Invasion, Benedictine estates – as most others throughout the kingdom – went through a rapid process of change. The disappearance of servant villages obliged monasteries to convert obligations fulfilled in kind into cash dues, adapted as required to local economic conditions. There was a further reorganisation of

monastic estates in the fourteenth and fifteenth centuries, but what this involved has not yet been the subject of any detailed study. This absence is down to the late medieval crises of the order: many of the Árpád era abbeys were closed down in the fourteenth century, and most of the survivors were in the hands of commendators in the fifteenth. Historians of the order have tended to highlight the decline and to forget that the houses which remained, despite the obvious problems, were stable and – at least in economic terms – under control. We have evidence for this in Act XX of 1498, in which five monastic institutions were among the ecclesiastical knights banneret, and three of these were Benedictine abbeys (Pannonhalma, Pécsvárad and Zobor, although the latter had already been merged with the Diocese of Nitra). A line of research which started only recently is discovering that abbeys in different parts of the kingdom pursued different economic strategies. Garamszentbenedek, for example, granted leases on about half of its lands, while Cluj-Mănăștur in Transylvania managed all of its own estates, and even its income from its vineyards was collected in kind. These differences clearly arose from regional variations in socio-economic conditions. Although the sources are still being studied, it is already quite clear that there was no such thing as "Benedictine estate management" in the late medieval period, and each abbey – as far as its surviving documents allow – has to be assessed separately. This is hardly surprising. The Benedictines had no central organisation; attempts to establish a Hungarian congregation in the fourteenth century seem to have petered out by the fifteenth century. It was only through the work of Máté Tolnai, Abbot of Pannonhalma in the early sixteenth century, that the Hungarian Benedictine congregation was set up in 1514, but that belongs to the history of the modern age.

Monasteries of the Eastern rite (Basilite monasteries) also appeared in Hungary in the eleventh century, but most of them closed or fell into the hands of other, Western, religious orders by the early thirteenth. As a result, we know much less about their estates and how they ran them than we do for the Benedictines, but what data we do have suggests that their economic affairs were similar to those of the Benedictines in the Árpád era. This emerges from the examples of Szárvaszentdemeter and Visegrád.

The economy of Cistercian monasteries

It was mentioned in the historiographical review that the unevenness of sources in Hungary poses severe problems for methodology. It is quite certain that we cannot trace the formation and development of the economic affairs of the vast majority of individual monasteries. That is what led Elek Kalász to draw on foreign sources for his study of Szentgotthárd Abbey, an approach which, although methodologically valid in principle, raises two serious concerns. Firstly, he chose parallels far removed from Hungary in time and space (although distance seems the lesser problem in this case), and secondly he considered only a small part of Hungarian sources. It is therefore worthwhile considering whether, by examining the sources concerning a single order's Hungarian monasteries, specifically the abbeys of the Cistercian order, and comparing the general picture we obtain with the practices of the same order in contemporary Europe, we might gain a more realistic view of the economic situation of abbeys in Hungary, and of the expectations and aims of the order. What follows is an attempt to outline at least some what such an analysis may tell us.

With the exception of Cikádor Abbey, the Cistercian order settled in Hungary in the late twelfth century, and under somewhat unusual circumstances. King Béla III was the direct patron of five of the six abbeys founded in the final decade of the century, and gave his active support to the sixth. In a break from usual practice (also applying to the foundation of Cikádor) the parent abbey of the new foundations was not one of those in geographical proximity (such as Heiligenkreuz). The monks came directly from the Burgundian centre of the order: to Egres from Pontigny, to Zirc from Clairvaux, to Pilis from Acey, and to

Szentgotthárd from Troisfontains. The fifth royal foundation, Pásztó, was an affiliate of Pilis, and the only private foundation of the age, Borsmonostor, was populated by monks from Heiligenkreuz. There was to be another directly Burgundian foundation in the Kingdom of Hungary. At Topusko in Slavonia, Andrew II founded an abbey with monks from Clairvaux. This means that during the period of foundations, the Hungarian Cistercians had extremely close relations with the order's Burgundian centre, and in 1183 Abbey Peter of Cîteaux himself travelled to the kingdom.

Secondly, the estates of these early foundations seem to have fallen somewhat short of the Cistercian expectations of the time. The *grangia* system was hardly established at all, there were very few *conversi* in Hungarian abbeys even in the earliest times, and a strikingly high number of estates provided direct cash income (tolls and customs duties, salt income). It is also remarkable that some Cistercian estates had possession of sources of income which in other European lands (England, France, Holy Roman Empire) provided substantial abbey revenue (sheep farming, vineyards, fishponds, metalwork, and even ore mining). The estate and revenue structure of abbeys established in the late twelfth and early thirteenth centuries thus more or less corresponded to the contemporary economic system recognisable in other the order's other abbeys. Of course it was not possible to exploit all of the opportunities. The ore deposits on the estates of Szentgotthárd Abbey proved uneconomical to work after the ore mines in neighbouring Styria opened at the turn of the twelfth and thirteenth centuries. Similarly, Borsmonostor Abbey failed to become a major sheep farming centre because the quality of Hungarian wool could not compete with that from England and elsewhere. Among the estates which did prosper were those with vineyards. French monks must have brought with them the advanced vinicultural techniques from their homeland, although these were already spreading in Hungary, partly via Wallonian vineyardists who settled in the kingdom around this time. As with the Benedictine abbeys, Cistercian estates were not arranged in a single block, although they were not as widely scattered or complex around the time of their foundation in the late twelfth century.

The central hierarchy of the order clearly took a close interest in the opportunities available. Although the grand chapters regularly issued orders against the spread of paid labour, the leasing of estates and the cash economy, the reality was different, as the Cistercian leaders well knew. For one thing, by acquiescing in the failure to recruit many *conversi* brothers in Hungary (the grand chapter granted permission in 1203 for the employment of paid labourers in abbeys in Bohemia, Poland and Hungary) they clearly had the advance of their order in mind, and they also soon had to face the fact that abbeys in Hungary had great trouble in recruiting monks. This can be clearly inferred from the number of French monks, who still formed a majority in the first third of the thirteenth century. Secondly, the estates acquired by royal donation were strikingly similar in character to those of contemporary Cistercian abbeys operating successfully elsewhere, complete with the cash transactions which were already prevalence in the late twelfth century. This quite definitely developed with the knowledge and consent of the order's leaders.

Archaeological findings can usefully complement what the documents tell us about the economics of Cistercian abbeys. This has been most useful for Pilis Abbey, and has helped in some respects for Pásztó and Topusko. Béla III founded an abbey in the middle of the royal forest of Pilis in the late twelfth century. Pilis Abbey engaged in considerable industrial activity: glassmaking at its nearby *grangia* (the wasteland of Nagykovács) and beside the abbey buildings there was a metallurgical operation in the late medieval period. The capacity of the latter is indicated by the metre-thick layer of slag excavated in the area of the forge, and by the rebuilding of the forge first after the monastery burned down in 1526, clearly trusting in its capability to provide income to restore the rest. In the area around the abbey, there were fishponds, mills and a quarry, and the brothers also probably engaged in forestry on their Pilis

estates. At Pásztó, although the Cistercians took over a well-equipped glass house from the Benedictines, they only ran it for another fifty years. The building was not restored after its destruction during the Mongol Invasion, possibly owing to the exhaustion of raw material, but there may also have been a lack of available expertise.

Commercial activity emerges from the documentary records as being an area of intensive activity for the Cistercians. Topusko Abbey sold its products at the market; Pilis Abbey did the same via its house in Pressburg, and Pétervárad Abbey via its house in Buda. The produce was most often wine from the abbeys' vineyards, and they also sold other agricultural produce and sometimes craft products.

Paulist estates

Another key research question regarding the monastic economy is how affairs changed with time. A good example is the economy of the Paulist order in the late medieval period, when existing estates started to be managed differently, and a new form of acquisition emerged. The Paulists started in very modest circumstances in the thirteenth century, in locations befitting a community of hermits, but were later recognised as an order and in the second half of the fourteenth century became increasingly economically active. Part of the driving force for this was the multiplication of baronial donations after papal confirmation in 1308, although the salt allowance – granted by Louis I and confirmed by several monarchs – also greatly contributed to the order's accumulation of wealth. At the end of the century, a new estate structure and system of estate management began to emerge. It was based partly on the cash income from urban houses, mills, various tolls and customs duties, wine trade, etc, partly on pledging the income from these, and there was also income from various dues. The privileged position of the Paulists' principal friary derived, in addition to its role within the order, from its proximity to the royal centre of Buda (and to Pest). These economic developments may be seen as being behind the foundation of the short-lived friary at Kenderes on the Great Plain in the fifteenth century, and the subsequent transfer of its lands to the Budaszentlőrinc Friary, indirectly giving the order an opening into the growing cattle trade.

It was largely from the nobility that the order drew its members until the end of the Middle Ages, although it also maintained intensive – largely economic – relations with the nearby (market) towns. Support from propertied townspeople is detectable mainly in West Hungary (Sopron, Pressburg, Szalónak [Stadtschlaining]), Slavonia (Zagreb, Dubica) and the Dalmatian coast (Zara).

At the turn of the fifteenth and sixteenth centuries, the better-off houses of the Paulist order were becoming increasingly reliant on estates which provided a cash income. The components of this economic system were all markedly present in the management of the order's Rome house in the sixteenth century. Such a form of management was quite widespread in Western Europe, already being known and exploited by the Benedictine and Cistercian abbeys in the thirteenth, and in some places even in the twelfth, centuries. In Hungary, however, it is in the late medieval economy of the Paulists that we can first detect such practices of estate management and capital investment, and although they were probably not on their own in this respect, we simply do not have enough knowledge about the late medieval management followed by the other orders.

There is another aspect of Paulist affairs which we should mention. It is clear from the surviving sixteenth-century *formularia* of the Paulist order, and also from a large number of late-medieval last wills providing for pious donations, that the Paulists' estates and income, even with their relatively advanced management, could not cover the costs of maintaining the friaries and providing a living for the friars, a state of affairs more characteristic of mendicant

orders. A substantial if occasional contribution to the economy of some friaries came from various feasts, and a more constant revenue derived from places of pilgrimage (such as the grave of St Paul the Hermit in Budaszentlőrinc). The absence of sources precludes any estimate of this income, but its effect on construction is perceptible.

Mendicant-order economics

The next area of discussion concerns the mendicant orders, specifically the two largest, the Dominicans and the Franciscans. As noted in the introduction, the orders which did not originally possess land stood well apart from those which did in terms of how they made their living. The brothers in the early period lived entirely on donations, and sums received under various headings remained the principal income of friaries throughout the Middle Ages. The Dominicans, for example, were often the beneficiaries of landowners' wills, and thus received properties which could either be sold, or redeemed by the family heirs. It was also quite common for the sum payable in redemption to be set into the will. The testator in such a case no doubt expected that his relatives would want to re-acquire the donated property, but would need time to obtain sufficient means.

Towards the end of the Middle Ages, however, Dominican and Franciscan friaries began to hold title to their own estates, mostly vineyards, orchards, small farms and fishponds which all served the daily needs of the friars. In most cases around the turn of the fourteenth and fifteenth centuries, it is not clear whether the possession of an estate by a friary for a sustained period was due to unfortunate family circumstances or deliberate permanent donation. However, patrons of some friaries founded in the Conventual branch of the Franciscans at the end of the fourteenth century (Kismarton and Szemeny) provided an endowment of estates because they could not assure the friars of an appropriate mendicant environment. There were other Conventual Franciscan friaries with minor estates (Sopron, Nitra, Segesd, Futog, Bistrica) which in part provided them cash income. Such were the mills of the Nitra and Sopron friaries, and the Buda house of the Segesd friars, on which we have data for 1433. This information purely concerns the fact of possession. For the Franciscans' economic affairs, we have even fewer references. The only source which is to any extent continuous comprises two account books for the Sopron friary, containing figures for two extended periods in the early sixteenth century (1518-1522 and 1524-1527). These tell us that the Hungarian Franciscans – like their fellows in Western Europe – arranged their estate affairs via secular procurators (*kirchvater, kirchmeister*) and did not seem to have great success in deriving a surplus from their estates. The Sopron example leads us to the conclusion that a large section of the friary's income came from the alms of the faithful, but it is not possible to determine the magnitude and composition of this (cash or donations in kind). This of course only concerned the Conventual branch of the order. The Observants stuck strictly to the ideal of poverty and consistently rejected possession of property – at least in Hungary. The Observant vicariate obtained its living probably from three sources: income, partly in kind, from their mendicant district; regular or occasional donations from monarchs and barons; and via hermit-like houses. There is some meagre documentary data surviving on the first two sources of income, but none at all on the third. Archaeology, however, has opened up the possibility of filling this gap in Hungary, as it has in other countries, such as France. The support of monarchs and barons is also sometimes suggested by the location of the friary. In Visegrád, for example, the Observant friary founded by Sigismund was built directly adjacent to the royal palace, and a major phase of construction started in the Franciscan friary in Buda after the royal palace was relocated from the north to the south side of Castle Hill, next to the friary. The amount of income some friaries received in kind may be inferred from the enormous cellars in some of them, such as Visegrád. Sometimes we can also

infer the contribution a friary made to the economic development of the town or surrounding area, partly through its craft activity and partly by "generating business" (e.g. Târgu Mureş).

Like the Franciscans, the Dominicans also became landowners in the late medieval period, although by a somewhat different route. Some Dominican friaries had already had minor properties in the fourteenth century, and Pope Martin V granted permission to possess these in 1425. Finally, Pope Sixtus IV, at the Dominicans' request, permitted the whole order to retain estates, thus abolishing the mendicant status of the order. The decision was no doubt prompted by the economic changes of the fifteenth century, as the cash economy became more predominant and estates were increasingly put out to lease. Renunciation of landed property was not only justified on the grounds of poverty; land required regular management, and a large proportion of the income from it was in kind. This conflicted with the extremely high level of mobility attaching to the vocation of mendicant friars. From an early sixteenth-century source, for example, which lists the friars of the Dominicans' Transylvanian vicariate, including those of Sighişoara friary, we know that the residents of each friary changed very rapidly. Landed estates, based on peasant tenancies and transactions in kind, would have created bonds that were difficult to break. The rise of the cash economy clearly changed the situation sufficiently that the Dominican general considered it opportune to lift the ban. The order to a large extent maintained its contacts with society, and the resulting donations and legacies. This social support is reflected in the written sources and, for example, the gravestones in the Buda friary.

Conditions in Hungary, of course, differed sharply from those in Western Europe, so that the Dominicans could not have lived from their cash income alone. From the data available, it seems that more than half of the friaries of the province had some kind of property, and in contrast with the Franciscans, it was those observant of the Dominican rule that tended to have the most diverse lands, most of them of course providing a living for the friars. These predominantly comprised farms, fishponds, vineyards, and sometimes revenue-generating mills. Nonetheless, the available data suggests that if they were left an urban house in a will, they did not, or were not able to, keep it. The order's largest estate was the abbey estate of Vértesszentkereszt, taken over from the Benedictines, for whom, even in that period of decline, it was a very small possession. The late medieval documents also reveal that regardless of permission the Dominicans frequently had no choice but to become holders of property, because the original owners were unable to redeem an estate passing to the friary by bequest or as a pledge against a loan. Such data is informative of the kingdom's general economic condition as well as certain aspects of monastic economics. Slowness or failure to redeem an estate was most commonly the result of impecuniousness or liquidity problems.

Besides the two main mendicant orders, it is important to mention the hermits of the Augustinian order. Their documentary records have received somewhat less treatment, but the fragmentary picture which has emerged shows that several friaries possessed quite extensive properties (e.g. Újhely, Veľký Šariš, Hrabkov, and Osijek). Although the order's Ratisbon Constitutions of the late thirteenth century reflected the strict rule of poverty, several of its monasteries in Hungary had previously belonged to the Wilhelmite order, and no doubt retained the property they inherited along with them. In the late fifteenth century, Matthias' policy of supporting the reform of religious orders furnished the Augustinians with new estates, namely the abandoned Cistercian abbey of Ercsi (the Ercsi convent only started in the 1520s). At the current stage of exploring the sources, we only know of the existence of estates, and hardly anything about their composition or management.

Economic affairs of nunneries

Unlike many regions of Western Europe, there were very few nuns' convents in Hungary. A large proportion of female communities were small Beguine groups who derived a living from their own work and through gifts of money and property from townspeople, often donated by the women joining them. Most of these small Beguine communities emerged right at the end of the medieval period, whereas there were some real nuns' convents from an early date. The most prominent of these, the Dominican convent on Margit Island founded by King Béla IV in 1252 and the Clarissan convent founded in Óbuda by Queen Elizabeth in 1331, were also among the largest ecclesiastical landowners in the kingdom. Court actions by the Margit Island convent give us a good account of its land holdings. The structure of its estates hardly changed from that of Árpád era nunneries, except perhaps a larger proportion of holdings providing a cash income, in line with the changes of the age. In addition to these there were two convents founded in the eleventh century which had substantial property: the Convent of the Byzantine rite in Veszprémvölgy (became Cistercian in the thirteenth century) and the Benedictine convent in Somlóvásárhely (became Premonstratensian in the sixteenth century).

Estates provided the economic basis for convents of all orders, the differences only being in their extent. Convents' estates varied in size according to their founders (the king, or a town, sometimes others) and their later patrons (monarchs, barons or townspeople).

A thorough understanding and more penetrating analysis of the medieval monastic economy requires the historian to go beyond strictly medieval sources. It is essential to involve the largely unexplored documentary material of the early modern age, roughly up to Hungary's three-way split in the middle of the sixteenth century. This is because the running of medieval monasteries the greater part of the kingdom did not come to a stop with the Battle of Mohács. The surviving monasteries kept control of their estates for several decades, although they undoubtedly had to face many difficulties (wartime destruction, acts of violence, religious tensions). The structure of their economy changed only gradually, over a long period. Fortunately, for the area of the kingdom which escaped occupation, there is a very large number of documents from this period, most of them completely untouched, *terra incognita*.

The urban economy in medieval Hungary

Katalin Szende

For every branch of the medieval economy, from mining to animal husbandry, or handicrafts to forestry, there are innumerable paths that link them to the towns. This is particularly true for trade, domestic and foreign. What follows is not an attempt to embrace this complex area in its entirety, and neither is it necessary, because many aspects are covered by chapters of this book dealing with specific branches of the economy. Instead, this article aims to determine how the town, as a particular form of settlement and social structure, influenced and interlinked economic activities, and vice versa: how the local economy formed or transformed the countenance and people of Hungarian towns. Since there is another chapter devoted to market towns, the focus of attention here will be the royal free towns. Royal private towns, and towns owned by ecclesiastical or private landowners, could be the subject of another study.

I. Scope of study: town and economy

In the Middle Ages, towns did not form a homogeneous category.[592] Even if we look at the functional rather than the legal concept of the town (as indeed the economic approach would require) we have to contend with the fundamental rearrangement between early centres and later urban settlements. In the western half of Europe, this process took place in the eleventh and twelfth centuries; Hungary experienced it mainly in the second and third quarters of the thirteenth. A full analysis of the process is well beyond the scope of this study, but one can usefully focus on one of its major aspects. The clear gainer in the transformation was the economy. The early centres had hinged around control/administration and church/cultic functions, and it was to these that economic activities were connected, often in a widely separated spatial arrangement. By contrast, the new model of urbanisation took its direction from the economy, which was the driving force for settlement and determined how the other central functions formed up.[593]

As the economy started to play a more prominent role in the formation of towns, the converse also applied: the towns which grew up after the middle of the thirteenth century attracted to themselves an increasingly diverse and substantial section of economic activities. We have insufficient sources to measure this tendency precisely, but it emerges indirectly from archaeological and written sources as one of the distinctive features of the late medieval period, and corresponds to what was happening elsewhere in Europe.[594] Progress was qualitative as well as quantitative, and can be traced in the "urbanisation" of all three main sectors of the economy – production, distribution and consumption.

In assessing the rising economic role of the towns, the urban economy as an overall framework must be distinguished from the economy of towns themselves. For the former, the town was the scene of production, interaction of buyers and sellers, and everyday consumption by the local and surrounding populations. Most research has dwelt on this side of the economy until now. The urban economy in the other sense meant the sum of economic activity engaged in by the town itself as a self-governing body and territorial unit. This activity was manifested at several levels. Firstly, the privileges granted to the town – which were frequently expanded in line with its own purposes – and the by-laws it made under its own authority, influenced and guided the economy by administrative means. It was in a town's basic interests to secure the best possible conditions for its inhabitants and to obtain as

[592] Irsigler 2003; on Hungary: Kubinyi 2004; Kubinyi 2006.
[593] Piekalski 2001; Johanek 2006; on Hungary: Szűcs 1993, 223–276; Laszlovszky 1995; Kubinyi 1996, Szende 2011.
[594] Perring 2002, 9–32, 107–126.

much income as possible from outsiders not eligible for its benefits. A further purpose of these measures was to ensure supplies to the town, especially basic foodstuffs and fuel.[595] Secondly, by building and maintaining town walls, streets, market places and other points of sale, public wells, water pipes and similar amenities, the town authorities put in place the infrastructure for economic activity.[596] Thirdly, by running its own enterprises – manors, woods, vineyards, fishponds, lime and brick kilns, mills and other means of production appropriate to local natural endowments – and selling the products, towns were active agents in the local, regional and national economy.[597]

The framework of the urban economy was not defined purely by the internal needs of the local community. All holders of power – the monarch, and an ecclesiastical or secular landowner – could impose their own wishes. In so doing, the founding landowners were doing more than demonstrating their presence and providing themselves with a residential base. They wanted to use the towns' resources to reinforce their power in the economic field too. The most common and most lucrative of the means they employed to this end was the imposition of taxes and seigneurial dues, in regular and irregular forms. Less universal, but also delivering substantial sums was the use of services available in the town (provision of food and accommodation, production and delivery of military supplies). In addition, there were some places, most of all the mining towns, where the owner of the town was himself an entrepreneur in control of production.

Finally, an examination of towns' economic role must also take into account the wider context, the links between town and country. These include relations with peasant communities near the town and subject to it as landlord; villages that traded with the towns and were a source of new urban inhabitants; and the market towns and small towns in the town's hinterland. It was the very functional differentiation of these settlements that strengthened their interdependence and forged close links between them.[598] Going one step further, one encounters the question of economic relations among towns, and the town network. Did these relations involve cooperation, coordinated action, hierarchical relations or competition? How intense were they, what was their geographical reach, and what inhibited their operation?

II. Sources and studies

Sources on the economy of medieval Hungarian towns are at once abundant and scarce, full and fragmentary, encouraging and hopeless. In some towns diverse and informative written sources have been preserved, in others only a single valuable set of sources, and in yet others only sporadic, fragmentary data, if any. Among the first group are the free royal towns of Upper Hungary and some mining towns,[599] the Transylvanian Saxon towns,[600] and, within the territory of modern Hungary, Sopron.[601] The second category includes Buda, which despite the loss of its medieval archives has left us such valuable sources as the Statute Book, the guild book of the German butchers and the wine tithe registers of 1505 and 1510.[602] We might also include here Cluj, which preserves a fine series of charters and documents that form a solid base to work on.[603] The third group embraces the

[595] Isenmann, 1988. 396–400; Keene 1998.
[596] Fouquet 1999; Paranko 2000.
[597] E.g. Dirlmeier – Fouquet 1985.
[598] Perring 2002, 2–5. Denecke 1985.
[599] Some source publications: Iványi 1910, Iványi 1931, Piirainen 1983, Piirainen 1986, Halaga – Gottas 1994,
[600] Quellen Hermannstadt, Quellen Kronstadt, Zimmermann,Werner and Gündisch 1892–1991.
[601] Házi 1921–1943, Mollay 1993 and further volumes in the series Quellen zur Geschichte er Stadt Ödenburg.
[602] Mollay 1959; Kenyeres 2008; Szakály and Szűcs 2005.
[603] Jakab 1870–1888.

royal and market towns of the Great Plain and even such major centres as Esztergom, Fehérvár and Pécs.

The unevenness of written source material has resulted in a picture of the medieval urban economy which, despite the best efforts of historians, is biased towards the better-represented towns. Research has built up a detailed account of the patterns of production and consumption and regional roles of these places, while the affairs of towns and market towns in the middle expanses of the kingdom largely remain obscure. This puts all the more importance on archaeological excavations of areas of the country for which there are few written documents, and this can to some extent compensate for the unevenness of sources.[604] Excavations and building-archaeology research can localise buildings, roads, water pipes and similar structures that are mentioned in account books and other records, and establish their extent and phases of construction. They also reveal sources, and call attention to phenomena, which are inaccessible by other means. Excavations can cover the early phases of urban development before written sources were produced on any scale, and establish data on aspects of the built-up area or surrounding fields which were ignored by documents even in later periods.[605] Also important as sources are objects that can help in the analysis of local production, imports, consumption patterns, and the link between town and country. Archaeological research in Hungary and the Carpathian Basin has extended to nearly every major royal and episcopal town in recent decades.[606] These all have made contributions to the study of the economy of the towns themselves and economic activity under their control.

Primary among written sources concerning the economy are the privilegial charters. As we have seen, towns formed and developed at the will of the monarch or ecclesiastical or secular landowners. The relationship between towns and the monarch was to a large extent determined by the privilegial charter. This, rather than a unilateral statement of royal grace, has been shown by recent research to have been a kind of contract between landowners and town-dwellers.[607] The economic aspects of town charters were systematically analysed several decades ago in a classic study written by Erik Fügedi. This demonstrated that the charters set the framework for the town's operation both as a venue for economic activity and as an enterprise in itself.[608] The charters granted permission for weekly markets and annual fairs on specified days, the right to force road travellers to pass through the town, and the staple right.[609] Other rights in this context were linked with a provision often repeated in later town by-laws that outsiders could only sell wholesale quantities.[610] From the point of view of town-dwellers, exemption from customs anywhere in the kingdom was the factor which most stimulated trade, and starting in the reign of Andrew II became an almost indispensable feature of *hospes* privileges, and through these, of town charters.[611] These sections of the charters were an attempt to strengthen the towns as trade centres at the expense of surrounding and more distant towns and villages.

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[604] Font and G. Sándor 2000, Szende 2009, Szende 2010 with further literature on the archaeological research of Hungarian towns.

[605] Verhulst 1997; Szende 1998, O'Keeffe and Yamin, 2006.

[606] See the various studies in Benkő and Kovács 2010.

[607] The texts of all privilegial charters issued to towns in medieval Hungary are not available in a common new critical edition. For the territories of modern Hungary and Romania up to 1300 see Kubinyi 1997 and Kubinyi 2005, respectively, for present-day Slovakia up to 1328, see Marsina 1987 and Juck 1984. For parts of the Carpathian Basin in Ukraine, Serbia and Croatia only old source publications are at our disposal. On the thirteenth-century privileges see Szende, forthcoming.

[608] Fügedi 1981, 239–280.

[609] Weisz 2010. See also A. Kubinyi's study on internal trade in the present volume.

[610] Mollay 1959. § 84, 104, 174, 418–424.; similarly in the privileges of Szatmár (Satu Mare) in 1271: „nec extranei mercatores incidendo vendere possint pannos suos", Kubinyi 2005, 49.

[611] Szűcs 1993, 54., Zsoldos and Neumann 2010, 32–34.

The basis of towns' own enterprises was a series of privileges transferring the king's rights of landlord over the town and fields around it, so that the land became the property of the community of burghers. Apart from some isolated cases, towns were also exempted from the corvee, because they held the rights of landownership on their own land. The grant of title to the land or other revenues around the town was often confirmed by linking the privileges to the perambulation of the boundaries.[612] Land ownership by the townspeople paved the way for the free trade of urban real estate. This, apart from sale of communally-owned urban property, took the form of business transactions between private individuals. Since taxes and dues were linked to property ownership, however, the municipal authorities maintained strict control and administrative supervision over the sale of houses, gardens, vineyards and other properties.[613] Municipal ownership usually incorporated the fields and pastures around the town, and the woods, which were the source of wood and stone.[614] Wherever the economy of the town demanded, as in the case of mining towns, the woods under exploitation could extend beyond the land around the town. When the king made grants of his "forest counties", the new owner often got into a bitter dispute with the town which had been using the forest.[615]

In return for the assignment of the land and the usufructory rights attached to it, the townspeople had to pay taxes. These included military support for the king and occasional royal "lodging" (*descensus*), but the charters show that the monarch looked to taxation on towns as his principal source of revenue from these places. Several studies have pointed out the role of towns in crown taxation and budget policy (and the limitations of that role).[616] Much less remarked on, however, is that the benefits and obligations provided by the charters necessarily encouraged towns to carry on their own enterprises and keep the municipal accounts in balance, and this also took its effect on the self-governance, internal life and even layout of the towns.

The most revealing information on towns' economic affairs comes from the accounts and other statements kept by municipal clerks. The fixed system of these records make it possible to trace changes in town income and expenditure from year to year. In both large and small towns, these account books were based on similar principles used everywhere in Europe.[617] The "income" column comprised taxes raised from the townspeople and various minor royal usufructory rights assigned to the towns (sale of wine and meat, use of woods), and the income of the municipal enterprises. In addition, there were sums from loans taken out by the town, sale of movable and immovable property, and duties and fines. On the expenditure side, there was payment of regular and extraordinary crown taxes, repair and maintenance of properties and communal roads, bridges and defences carried out at municipal expense, the pay of municipal employees, sometimes maintenance of professional soldiers, banquets for high-placed visitors and their retinues, delegations and diplomatic gifts, and items related to the repayment of loans and collection of dues. Each volume contains several thousand items of economically-interpretable information. Such accounts have survived from

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[612] The issue of landownership features prominently e.g. in the privileges of Pest (Kubinyi 1997, 39–41) and Győr (Kubinyi 1997, 61–63.). Boundary descriptions are added to the privileges of Besztercebánya (Banská Bystrica), 1255: Marsina 1987, 340–341.; Nyitra (Nitra), 1248: Marsina 1987, 208–209.; Hibe (Hybe), 1265: Juck 1984, 48–50.; Késmárk (Kežmarok), 1269: Juck 1984, 51–52.; Szatmár, 1271: Kubinyi 2005, 49.

[613] Kováts 1918a, Szende 1996, Mollay 1993.

[614] E.g. Zólyom (Zvolen), 1243: "ligna autem infra metas terre ville eorum libere possint incidere et lapides recipere", Marsina 1987, 94. In the privileges of Szatmár the king orders the ispán of nearby Ugocsa county, that "eisdem sylvam de Erdeud statueret usui eorum sufficientem", since the settlement does not have enough woods; see Kubinyi 2005, 49.

[615] Fügedi 1981, 264–265; Magyar 1985, Halaga 1996.

[616] Kováts 1900, Kováts 1902, Draskóczy 1993 and Kubinyi 2000a.

[617] Isenmann 1988, 170–180. For further literature as well as a glossary of the most frequent Latin and German terms in the account books see: http://online-media.uni-marburg.de/ma_geschichte/computatio (last accessed: 4/2/2012).

medieval Sopron, Pressburg, Sibiu and Brašov, and fragments from Bistriţa, Bardejov and Prešov, and there are some tax registers and other lists of assorted sizes from other towns in Upper Hungary and Transylvania.[618]

III. Some elements of the urban economy

III.1 The town as entrepreneur – the town as builder

As wesaw in connection with charters, if towns were to run municipal institutions and properties and bear the burdens imposed by their overlord (the king), they had to become engaged in active enterprise.[619]

The account books tell us that the biggest drain on the annual budget nearly everywhere, apart from payment of taxes, was the building and upkeep of infrastructure, particularly defensive works,[620] since participation in the defence of the town was the second-ranking obligation borne by townspeople (the first being taxation). As a criterion of urban status for a medieval settlement, defensive walls were as important at the time as they became in retrospect. Although not absolutely essential for urban development, the town wall was an unmistakeable manifestation of urbanity, and its image was often proudly included as a symbol on town seals and coats of arms. Taking over responsibility for the defence of their town from the overlord was a great qualitative leap for the burghers' community, but of course a financial burden at the same time. This burden was partly met from the escheated property of persons who died intestate. The charters of privileges of the most prominent towns, Buda (a charter of 1276 confirming previous privileges) and Kosiče (charter of 1347) assigned this property not to the crown, but one third to charitable purposes and two thirds to the construction of the town walls.[621] Since Buda's charter later became the model for towns throughout the kingdom, this provision became increasingly widespread. Later, as the custom of writing a will spread, a sense of solidarity among the town community prompted townspeople to support the construction of the defences of their own free will.[622]

The account books show that construction took up 12-20% of total expenditure in some European towns during the fifteenth century.[623] The corresponding figure for Pressburg was 18.5% in 1526/1527,[624] and for Braşov it varied between 5.9 and 25% between 1521 and 1526, with an average of 14.6%.[625] The workers included carpenters, masons, locksmiths, blacksmiths and carters, whose work can be traced from day to day via the accounts. The fifteenth-century accounts of Sopron tell us that tradesmen received weekly wages in the form of 6 day-wages paid as a lump sum; the number of tradesmen and the duration of their employment depended on the stage of the construction works.[626]

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[618] Teutsch 1892, Kováts 1900, Kováts 1918b. Main editions of account books: Fejérpataky 1885, Házi 1921–1943, vols. II/2–6, Iványi 1910, passim, Iványi 1931, passim, Quellen Hermannstadt 1880; Quellen Kronstadt 1886–1889. The account books of Pozsony (Bratislava, Pressburg) up to 1526 are available in the photo collection of the National Archives of Hungary (MOL) DF 277059–277133. Later volumes from the sixteenth century are available in: MOL Microfilm collection Box C 402.

[619] Lederer 1934, Szűcs 1955, 198–254 and Halaga 1983.

[620] Fouquet 1999, 17–80; Sander-Berke 1997.

[621] The confirmation of Buda's privileges, 1276: Kubinyi 1997, 64–65; Kassa (Košice), 1347: Juck 1984, 147–149.

[622] Szende 2004.

[623] In Nuremberg between 1430 and 1440 this proportion was 18%, in Hamburg 19,3%, in Schwäbisch Hall 13,1%, in Basel 12%. See Isenmann 1988, 176–178, Fouquet 1999, 309–332 and Diagramm 4–8.

[624] Danninger 1907.

[625] Simon 2006, Table 21.

[626] In Sopron, the following account books contain large amount of data on building activities: Házi 1921–1943, II/3. 1–18, 82–88, 148–195, 229–344, 389–406; vol. II/5, 47–65, 77–95, 118–138, 141–164, 205–241, 292–350, 382–440.

The cost of building materials fluctuated from year to according to the work that was needed. In this respect, the woods granted in the charter were crucial for obtaining the timber and quarried stone needed for the maintenance of the town defences and other public buildings. Other raw materials were produced by the towns themselves in lime and brick kilns. In Sopron, in addition to written records, much information has been obtained from a lime kiln uncovered in an archaeological excavation on the edge of the third quarter of the medieval suburbs, beside the bridge over the River Ikva, outside the house which now stands at number 4, Híd Street. Fragments of a jug found among the kiln debris dates the site to the middle of the fifteenth century.[627] Contemporary records do not reveal unambiguously whether the municipality operated these kilns. Both the account books and assembly minutes, however, do permit the inference that it was in Sopron's interests to monopolise the production and sale of lime. Lime kilns are mentioned in Dudlesz-dűlő (-field), lying about 5 km north of the town, in the period between 1403 and 1437, which probably passed to the town from the Agendorfer family. Lime firing also started up in the Felberbrunn-dűlő to the north east of the town in the late 1430s, and to meet rising demand, larger-capacity kilns were built in Attengräben-dűlő along the Pressburg road in the 1470s.[628] Records which survive more or less continuously from 1498 onwards tell us the number and wages of people who worked in lime firing, and the costs of refurbishing the kilns and quarrying and transporting the limestone, their raw material. We also know that as well as meeting the town's own needs, the kilns supplied the surrounding villages. The market zone extended 15-20 km to Eisenstadt and Marz in the north and at least 35-40 km to Csepreg, Bük and Beled in the south-east (fig. 1). An interesting aspect of the town's trading policy was that buyers from outside Sopron had to pay one-and-a-half times as much as local residents for the lime.[629]

The other main locally-produced building material was brick. Even towns quite well supplied with stone – such as Sopron – manufactured bricks because they were relatively cheap and easy to use. There is data on a brick kiln (*ziegeloffen*) and a kiln master (*ziegelmaister*) in Sopron in the early sixteenth century. The kiln master was usually a master mason, and he also supervised one of the lime kilns.[630] In the post-1528 account books, which were kept with greater regularity, the clerk set aside a separate expenditure column for the wages of the brick kiln master and the cost of running the kiln, and one income column for the returns on selling bricks. The sixteenth-century accounts also included data on the types and quantities of bricks produced.[631]

For data on defensive works, we have to rely most of all on archaeological research,[632] because many aspects of construction were not recorded in the accounts. In particular, when the first walls were erected, municipal literacy had not reached the level of keeping regular accounts of such works. Excavations can also offer an explanation for the appearance of some costs at later periods: existence or demolition of old structures, earthmoving work and the repair or conversion of parts of the wall system as military technology advanced.[633] Indeed, excavations and building archaeology can verify the existence of comprehensive defensive systems in towns where all of the written sources have been destroyed, such as in Székesfehérvár.[634] Building and reconstructing town walls also had its effect on the urban topography as a whole: walls determined the course of streets, as happened on the Castle Hill

[627] Gömöri 1984.
[628] Mollay 1992.
[629] Házi 1921–1943, II/5. 300, 332, 406–7, 412, Mollay 1992, 164–167 and map, 152–153.
[630] Mollay 1992, 164, Házi 1921–1943, II/5. 205, 235.
[631] Győr-Moson-Sopron megye Soproni Levéltára, Kammeramtsrechnungen, series IV. 1009.; cf. Baraczka 1969.
[632] Scholkmann 1997, VII–XI.
[633] Holl 1981, 201–243.
[634] Siklósi 1999.

in Buda,[635] and they left their impressions on the line of streets when they were demolished, like the thirteenth-century Pest town wall. Archaeological research in the same town has also shown the rearrangements and expropriations involved in laying out a new, outer wall in the early fifteenth century (figure 2).[636] The archaeologist has attempted to estimate the quantity of stone used in building and the quantity of earth that had to be moved. Construction obviously entailed enormous costs, but we know from other sources that Pest was so wealthy it had enough left over to be able to assist the constantly cash-strapped King Sigismund with the sum of 1000 florins, in return for which it asked for free appointment of judge and council.[637] This is an example of how closely interconnected are the issues of topographic development, the town economy and municipal administration.

Defence works were the largest, but not the only item of municipal construction expenditure. The town had to build and maintain at least one parish church, and occasionally extend it in order to house a growing population and to better express the prestige of the community. This was in turn a manifestation of autonomy, which had its own effects on the town economy. By European comparison, Hungarian towns were remarkably autonomous as regards advowson and other church patronage.[638] The rights came at a price: the town had to finance the priest and the church, which it did partly from community resources, although burghers' private donations also featured here. A recent investigation into affairs in Pressburg has shown up the significance of these with unusual precision. The variation over time of sums left in wills for building or maintaining churches corresponds almost exactly with the phases of construction determined by archaeological excavation or historic buildings research in the city. The wording of the wills often indicate that a new construction project stimulated or redirected townspeople's propensity to make donations. The Pressburg example is a most convincing demonstration of the inseparable unity of private and public investments, both in this world and the next.[639] Data for other towns may not be sufficient to permit the use of such quantitative methods, but there is still much that could be learned from the joint study of written and architectural sources.

Town defences and church buildings were accompanied by items of community-financed urban infrastructure which, although less ostentatious, similarly increased the town's attractiveness and widened its sources of revenue. The laying out, consolidation, surfacing and upkeep of roads, streets and squares were aspects of a town's economic life which have left traces susceptible to both archaeological and documentary research. There are already sufficient observations to form the basis of a comprehensive study. There have already been investigations of water pipes, wells and cisterns, the upkeep and repair of which are the subject of frequent entries into municipal account books.[640] Studies of the market place, the principal scene of urban trading activity, yield further points of intersection between the work of archaeologists and economic historians.

III.2 Market places and the urban economy

Topographical studies are an area of hitherto untapped potential for finding out about the Hungarian urban economy. Economic considerations were fundamental in the choice of a town's location, and its physical interior had an effect on the local economy. The prime movers in towns changing over from administrative-ecclesiastic centres into economic centres

[635] Végh 2006-2008, 53–61; Végh 2009.
[636] Irásné Melis 2004.
[637] Mollay 1959, § 445, p. 204–5.
[638] Kubinyi 1995.
[639] Majorossy 2006, Chapter III. 1. b.
[640] Kubinyi 1981, Nagy 2003, 358–359, 368–369, Siklósi 2003.

were the venues of organised and controlled exchange of goods – the market places. These were controlled and protected by the community, and as municipal autonomy strengthened, they took on increasing importance in the structuring of the economy and of the urban space as a whole.[641] How is this reflected in the layouts of medieval Hungarian towns, and how were their market places located, structured and supervised? The following examples give an indication of the potential and limitations of research in this area.

Óbuda is an "old type" of town, its original significance stemming from an ecclesiastical centre, the Provostal Church of St Peter, and an occasionally-used royal residence.[642] It also lay at a major Danube crossing point, an advantage which had led the Romans to set up the Aquincum military camp at almost the same place. The location and development of the town's medieval market place is therefore of particular significance. Like most of Óbuda's topographical features, repeated destruction and reconstruction have brought so many changes that we have to rely on archaeology alone for localisation and investigation of the market place (Fig. 3).[643] It was roughly triangular in shape, and lay to the south of the harbour, on a road to the ferry which was already in use in the eleventh or twelfth century. There were stone-built houses standing on both of the long sides of the square at the turn of the twelfth and thirteenth centuries, and a reconstruction of the plot system shows that the western side was probably lined with properties of equal size in an orderly row. Further topographical research is needed to determine whether these phenomena, which suggest planned development, date from the same time as the formation of the market or are related to later building around the square. Certainly, the road and the square were re-paved several times, and remained the only market place even after the town was divided between Queen Elizabeth and the Buda chapter in 1355.

This is particularly interesting, because there were also two market places in Veszprém, another town partially in the queen's possession, and from an earlier date. One market was held on Wednesdays and the other on Saturdays, and we know (from documentary analysis rather than archaeology) that they were certainly held in different places in 1318 (fig. 4). The Saturday market, which was more important, lay to the south of Várhegy hill, on what is now Óváros Square, on land owned by the Bishop of Veszprém. The lesser Wednesday market also had a topographically less central position: the Beszédkő Market on what is now Patak Square.[644]

Some elements of the market place of Győr have been determined from excavations on what is now Széchenyi Square, on the land of the medieval chapter town. These have shown that remains of an Árpád-era settlement were deliberately levelled on this site. The archaeological evidence clearly links this phenomenon to the town's charter of 1271, proving that the charter led to the restructuring of the town. The area maintained its market function continuously from the late thirteenth century, and was occupied by open-air stalls, tents, huts and little shops. To judge from the foundation trenches cut into the surface of the square for the sole timbers of the structures, and from their clay floors, these took up permanent positions at some points, and market infill was quite advanced by the end of the Middle Ages.[645] The area was only freed up and cleared of the huts when Győr was made into a fortress town in the mid-sixteenth century.[646]

Markets evolved with completely different morphological features in the towns of eastern Upper Hungary: Košice (figure 5), Bardejov, Eperjes, Prešov and their smaller

[641] On the legal and institutional framework of markets and fairs see Tringli 2010, Kubinyi 2000b.
[642] Fügedi 1959.
[643] Altmann and Bertalan 1991a, Altmann and Bertalan 1991b, Altmann 2004.
[644] Solymosi 2000, 140–147.
[645] Gabler, Szőnyi and Tomka 1990, 23–25. T. Szőnyi and Tomka 2002.
[646] Gecsényi 1991.

neighbours. These towns developed a spatial structure based on elongated market places widening in a spindle shape in the centre, the other streets of the town and the later ramparts also being arranged relative to these lines. The market place evolved when a section of the long-distance trading route, which was the foundation for the town's existence, was transformed into a built-up area, so that the spatial structure of the town itself confirmed its denizens' control over trade. At the centre or one end of the market place was the town's (usually only) parish church, on to which other public buildings (town hall, school, separate chapels) were later built.[647]

In Trnava, the market places reflect the two phases of the town's early development (fig. 6). The spindle-shaped market place in the east of the town was the venue of the early street market *Zumbothel* (Saturday-market), recorded in the place name and the 1238 charter. The market place in the west of the town took up a quadrilateral area at the intersection of the east-west street running from the parish church to the Franciscan friary and the north-south street between the two town gates. This formed the centre of a new district which was built up according to a plan, as encouraged by the town's charter.[648] West of this market place, on the other side of the street, also within the town wall, was the cereals market, its separate location being a clear sign of differentiation by type of goods.

The same trend appeared even more strongly in the functional diversification of Sopron's market places. The relatively small area of the town centre, squeezed within a triple ring of walls that incorporated the Roman walls and isolated from the main through-routes, severely restricted its trade functions. As an ispán's castle during the Árpád era, the inner town accommodated only the *Salzmarkt* (salt market), at the south-east corner, whose principal functions were storage and distribution rather than trade in the modern sense. The real market place lay outside the castle walls, where the intersecting trade routes to Vienna and Pressburg crossed the Ikva river.[649] The cereals, timber and livestock markets, whose locations are identified mostly from fifteenth-century data, occupied the eastern and western sections of the roads as they widened into squares outside the town's defensive trench. Within the walls, meat was sold on the salt market site and the area beside it, fish to the east of there, towards the Hátsókapu gate, and poultry and vegetables in the eastern protrusion beside Fő tér (Fragnermarkt). The area of Fő tér (Platz), and probably the triangular space south of the Franciscan friary, was where small but valuable goods – cloth, spices, jewellery and plate – were sold and was also the site of the annual fairs (fig. 7).[650]

The abundant written sources for Sopron tell us more than just the function of each market place. We can trace what opportunities were open to the town in the trading of goods, and how it profited from the trading facilities. Firstly, there were regulations which governed the opening hours of market places and the persons permitted to use them,[651] and secondly, the town authorities derived revenue from rental of shops, particularly shambles. There were municipal traders' stalls in Sopron beside the Franciscan friary and between the Előkapu gate and the northern outer gate, both of which have been precisely located by archaeological excavations.[652] The municipal accounts have entries for 12 butchers' shops in the *Salzmarkt* (now Orsolya tér) in 1466, and 14 in 1490. The latter definitely involved stone, brick or timber structures, because the town authorities paid day-rates to masons and carpenters for

[647] Mencl 1938, with the town plans of the major towns; Urbanová 2003a, Urbanová 2003b.
[648] The 1238 charter: Marsina 1987, 30–31., on the town plan: Mencl 1938, 44–49, Urbanová 2003, fig. 37.
[649] Holl 1996/7, 7–9.
[650] Holl 1979, 130–132, Holl 1996/7, 8–10, Jankó, Kücsán and Szende 2010, study 19–20, 23, gazetteer 72, map A.3.3.
[651] See the town statute of 1455 in Házi 1921–1943, II/2. 176.
[652] Jankó, Kücsán and Szende 2010, gazetteer 72.

their repair. The lease stipulated burgher status and guild membership, so that nobody from outside could rent the stalls or shops there.[653]

The most highly differentiated market system in the kingdom was of course to be found in the capital city, Buda. There were two market places on Castle Hill, the enormous, originally triangular St George's Market in the German district, in the middle third of the plateau, and the approximately square Szombathely ("Saturday-place") in the Hungarian district in the north-east corner.[654] Apart from the morphological difference between the two squares, their size and place in the street system reflected the relative standing of the two main ethnic groups within the population. Topographical research has proved that both market places occupied much larger areas when the town was first founded, and were gradually built on until, by the end of the fifteenth century, they were whittled down to the dimensions known from late medieval reconstructions (fig. 8).

The high level of specialisation among market places and other points of sale in Buda can be traced from three main sources: medieval street names (Kalmár [retailer] utca, Patikáros [apothecary] sor, Zsemlyeszék [baker's shop], Mészárszék [shambles], Elevenhalszer [live-fishmonger], Tikszer [poulterer], Nyirő [cloth shearer] utca, Tej [milk] utca); the topographical data from the tithe registers; and written regulations governing traders, above all the Statute Book. From the work of several generations of historians we have a good picture of the market-place layout, with the positions of stall-holders selling fruit, dried vegetables, cheese, chicken, game, fresh vegetables and salt, and the butchers' and bakers' shops.[655] Complementing the market system on Castle Hill were the produce markets in the suburbs (Búza [wheat] utca, Szénaszer [hay]), the markets of the Szentpétermártír and Zeiselbüchel markets, the slaughterhouse by the Danube[656], the ware- and storehouse in the vicinity of the harbour[657], and of course the markets and trading points of Pest. The annual fairs were held on Virgin Mary's Day in the Szentpétermártír district beside the castle, and on Whitsunday in Felhévíz.[658]

Even such a brief outline of the market places demonstrates the need for a functional-based study that links up topographical and economic-history research. How were the market places and stalls placed in relation to church buildings, ramparts and municipal buildings? How much was this influenced by deliberate planning? How central was the town market place? What measures did the town authorities take to regulate or change the positioning of markets? What direct and indirect revenue did the town obtain from maintaining places for trade, and what expenditure and obligations did this entail for the community? What other authorities (crown, secular landowners, church) had an influence in what went on there and profited from it? How were the market places related to the presence and location of ethnic groups in the town (including the Jews, not otherwise discussed here)? And what non-commercial functions did the market place have, such as in the administration of justice and communication? Rather than formal typological groupings, a study of such and similar questions could lead to much better understanding of the structure and operation of towns.

Balance: "To the multiple benefit of king and country?"

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[653] Holl 1996/7, függelék, 14. On the structure and layout of shambles, including the example of Sopron, see Benda 2012, 24–34.
[654] Végh 2006–2008, 156–211, 274–301, Benda 2011.
[655] Mollay 1959, Végh 2006–2008, 72–87, 108–122, Fig. 47–48., Benda 2011, 261–263, Fig. 2., Benda 2012.
[656] Végh 2008. The butchers had different locations for residential, commercial and industrial (slaughtering) purposes.
[657] Benda 2012, 40–46.
[658] Végh 2006–2008, 108–122.

The *arenga* of Körmend's charter of 1244 includes a statement characteristic of the time: "Cum constet evidenter ex fideli confluentium hospitum famulatu regi et regno multiplex commodum provenire…",[659] (it is clear that the gathering together of faithfully serving hospites bears multiple benefits for the king and the realm). Were the king's expectations fulfilled? And were these expectations to the benefit of the towns themselves?

The word "commodum" meant, in addition to mere material gain, advantage, convenience and favour. As we have seen in connection with building the ramparts, these very costly constructions, like the other community-maintained components of the urban space, meant much more to both the king and the town than the money it cost to build them. Nonetheless, it is mainly the pecuniary side of these questions that a study of the urban economy can address. Given the amount of data available, it is as difficult to draw up a balance of municipal accounts as the trade balance of the kingdom as a whole. Where this has been attempted, the calculations show that the majority of urban revenue – regardless of its source – went under various headings to satisfy the needs of the king's treasury or army.[660] The pecuniary obligations often exceeded the towns' means, requiring them to take out loans, and in serious cases causing permanent indebtedness.[661] Municipal authorities took out the loans partly from their own burghers and partly from other individuals, both Christian and Jew.

Some of the municipal enterprises, as touched on earlier, also served to cover the town's external liabilities. Others were set up to satisfy internal needs, but took advantage of the opportunities available to extend their reach beyond the town boundaries, as we saw in the case of the Sopron lime kilns. It was a similar situation with municipally-operated mills, omitted from the discussion for reasons of space. Finally, towns had "enterprises" that concentrated on local needs and followed more than economic criteria, such as the maintenance of schools, poor houses and hospitals.[662] Experience in running such operations meant that when the Reformation came, the town was able to take over what had been church benefits and foundations, and usually to manage them effectively.

In comparison with other forms of organisation, above all the domain economy of ecclesiastical or secular landowners, the position of the urban economy was at once much better and much worse. The main differences lay in the artificial inflation of resources with privileges and favours, and in the continual – regular and irregular – extraction of taxes. Part of this mutuality-based policy was the town's management of its land. The monarch renounced his direct title to the benefit of the townspeople in the hope that the more intensive utilisation of the land would indirectly bring him higher revenue than could have been possible through putting it under direct cultivation. This resulted in the very strong interdependence of crown and town, in respect of which royal policy towards the towns can be set beside "municipal policy towards the crown", towns' relations to the monarchs. In the same way, private landowners had a role in stimulating the economy of their own towns, and in making use of urban revenue, similar to that of the king in relation to royal towns. Town and its overlord were also closely interdependent. Nonetheless, it was certainly the king or the overlord who had the upper hand. In the long term, the undoubted dependence on crown economic policy inhibited the growth of towns and became even more restrictive in the centuries after the end of the Middle Ages.[663]

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[659] Kubinyi 1997, 38–39; Kubinyi 1984.
[660] Kováts 1900, Kováts 1902, Simon 2006., Kubinyi 1993.
[661] See e.g. Pühringer 2003, with further references.
[662] Majorossy and Szende 2008, 434–437.
[663] Zimányi 1980, H. Németh 2008, H. Németh 2011.

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László Szende

Medieval crafts

"…the pious faithful should not neglect those many useful things created by the foresight of the ancients; what God has left to man as his inheritance, man should strive avidly to learn." The Benedictine monk Theophilus Presbyter, who was active at the turn of the eleventh and twelfth centuries, gave this general appraisal of crafts in the introductory chapter of his book *Schedula diversarum artium.* He succinctly defined crafts as "the useful work of the hands". Historical enquiries have of course gone somewhat beyond this, and through the work of several disciplines, employing various methodologies, we now have a complex view of the definition and socio-economic role of crafts. Ethnographers, historians and archaeologists have all brought their own individual methods to bear, but their results are best viewed side by side in a coordinated interdisciplinary approach, and further detail may be added to the picture by incorporating archaeometric analyses. There has been a welcome increase in the number of craft-related studies and monographs in Hungary in recent decades, but most of these are published in Hungarian, and their findings have only indirectly been available to international research.

The first and most fundamental problem has been to find a precise definition of "crafts". Owing to methodological differences, a consensus has yet to emerge. The most recent review uses the following key concepts: independent productive activity, learned skills, fashioning by hand, and products made individually or at most in small series. To these may be added the technical terms of material culture, since most of the objects made were used in everyday life. The skills craftsmen had to learn would also be a worthwhile area of study if there were sufficient usable sources. All we have to go on are late medieval or early modern guild charters which prescribed the "tricks of the trade" to be acquired by apprentices and journeymen before they could be admitted as masters. Neither do we know whether there existed in medieval Hungary any practical works of reference of the kind there were in the West – like Theophilus Presbyter's. Or to put the question differently: was there any need for a body of practical knowledge to be put in writing? Since apprentices were trained on the job, the information was passed on verbally, any search in vain for written sources might be in vain.

Craft sources

Sources on medieval Hungarian crafts – written, archaeological and pictorial – are highly diverse, and there are also ethnographic analogies to draw on. Information from written sources presents is highly variable picture,[664] and is much scarcer for the Árpád era than for later in the Middle Ages. The important documents, above all ecclesiastical estate censuses, are those which made records of people who had trades or provided services. Particularly notable are privilegial charters of towns and villages, which started to become common in the thirteenth century. In many cases they granted permission for craftsmen to work there, and set the rules governing markets and excise duties. Late medieval account books form a special area, and call for special methods to extract information from them. Much useful information can be gained from analysing urban wills[665], which often mention craftsmen's tools. Town

[664] Minderre lásd *Kubinyi András:* Die Rolle der Archäologie und der Urkunden bei der Erforschung des Alltagslebens im Spätmittelalter. In: Ferenc Glatz and Ervin Pamlényi (eds.): Études historiques hongroises 1985 publiées á l'occasion du Congrès International des Sciences Historiques. Vol. I. Budapest, 615-644. p.;

[665] Kézműves- vagy szolgáltató mesterséget Pozsonyban 224, (25,4 %), Sopronban 80 (25,5 %), Eperjesen 37 (30,3 %) végrendelet hátrahagyója űzött. A foglalkozási ágak: Pozsony –39., Sopron – 23., Eperjes – 21. Katalin Szende: Testaments and Testimonies. Orality and Literacy in Composing Last Wills in Late Medieval Hungary. In: Oral history of the Middle Ages. The spoken word in context. Medium Aevum Quotidianum; Sonderband,

statutes are an important set of sources with many layers. The most thoroughly studied is the Buda Statute Book, many of whose articles govern the work of craftsmen.[666]

Narrative sources tend to be less than eloquent on the subject of crafts. The fourteenth century chronicle composition mentions at one point that King Stephen I engaged stonemasons from Greece.[667] The Acephalus Codex devotes some lines to construction commissioned by Csanád Telegdi, Archbishop of Esztergom, and mentions some of the work it involved.[668] From the hagiographic literature, there is a much-cited passage in Greater Legend of St Gellért in which Gellért praises a woman working with a handmill.[669] Records of miracles also contain some information on craftsmen. One is the record of the canonisation of Margaret of the House of Árpád in 1276[670], which mentions Beguine Méza, who spun gold, and Feke, a carpenter who lived under Buda Castle. The account of miracles attributed to the intercession of St John Capistrano tells the story of Benedek Molnár, a miller who suffered an occupational accident.[671]

As important as written sources are archaeological findings, especially for the period of the Conquest and foundation of the state.[672] It is almost solely through archaeological finds that we can reconstruct the crafts of the Hungarians when they arrived in the Carpathian Basin. They permit the fairly definite conclusion that the most distinctive crafts had developed before the Conquest, and craft industries corresponded to the lifestyle of the steppe. According a broad consensus in the literature based on the Hungarians' material-culture vocabulary, objects and tools implying the existence of handicrafts were present from the very earliest times. The demand for tools of animal husbandry, fishing and cultivation, and for arms, horse gear and items of costume led to the emergence of specialised activities. Initially these were pursued alongside agricultural work and warfare rather than on their own, but there is evidence of their existence in occupation names such as *vasverő* (smith), *ötvös* (goldsmith), *ács* (carpenter), *bocsár* (cooper), *fazekas* (potter), *fonó* (spinner), *szűcs* (furrier) and *tímár* (tanner). After settling in the Carpathian Basin, contacts with the Slavic population led to the adoption of many Slavic words: *kovács* (blacksmith), *csatár* (swordsmith), *taszár* (carpenter), *kádár* (cooper), *takács* (weaver), *gerencsér* (potter), *esztergár* (woodturner). Toponyms that include names of trades are a special set of sources whose importance for research has long

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vol. 12. Ed.: Gerhard Jaritz. Budapest, 2001. 49–66.; Das Pressburger Protocollum testamentorum 1410 (1427) – 1529. Eds.: Judit Majorossy – Katalin Szende. Wien, 2010.

[666] Das Ofner Stadtrecht.
Eine deutschsprachige Rechtssammlung des 15. Jahrhunderts aus Ungarn. Hrsg. von *Karl Mollay.* Budapest, 1959.

[667] Scriptores rerum Hungaricarum. I. Edendo opero preaefuit: *Emericus Szentpétery*. Budapest, 1937. 317.

[668] Scriptores rerum Hungaricarum. I. Edendo opero preaefuit: *Emericus Szentpétery*. Budapest, 1937. 492–493. p.

[669] Scriptores rerum Hungaricarum. II. Edendo opero preaefuit: *Emericus Szentpétery*. Budapest, 1937. 475.

[670] József Laszlovszky: Fama sanctitatis and the Emergence of St. Margaret's Cult int he Rural Countryside. The Canonization Process and Social Mobility in Therteenth-Century Hungary. In: Promoting the Saints. Cults and Their Contexts froim Late Antiquity until the Early Modern Period. Essays in Honor of Gábor Klaniczay for His 60th Birthday. Edited by Ottó Gecser, József Laszlovszky, Balázs Nagy, Marcell Sebők and Katalin Szende. Budapest-New York, 2010, 103-123.

[671] Benedek mester „*baltát ragadva az egyik deszkát levette és gyalulni kezdte, és íme véletlenül egy kis szálka ment a jobb keze kisujjába.*" *Geszti János*: Kapisztrán Szent János csodái. Ford.: Fügedi Krisztina. In: Legendák és csodák (13–16. század). Szentek a magyar középkorból II. Szerk.: Madas Edit – Klaniczay Gábor. Budapest, 2001. 432. p.; Stanko Andrić: The Miracles of St. John Capistran. Budapest, 2000. 326-336.

[672] László Révész – Ibolya M. Nepper: The archaeological heritage of tha ancient Hungarians. In: The ancient Hungarians. Exhibition Catalogue. Edited by István Fodor. Budapest, 1996. 37-56.

been recognised. They can only be used, however, with the help of proper linguistic skills and archaeological methods.[673]

The blacksmith, nowadays denoted by the Slavic loan-word *kovács*, was known to the early Hungarians as a *vasverő*. It was a trade that required much skill and experience, and the blacksmith had to work in simple circumstances, being in constant motion with his forge. His products were chiefly tools, horse gear and weapons. The latter required great precision to make, so that the craftsmen who made them formed a separate class. The manufacture of one of the Hungarians' most important weapons, the recurve bow, can only be deduced from the methods known to have been available, because the only surviving remains (found in graves) are bone plates from the ends and on the grip. The drawn bow was carried in a separate quiver, whose exact shape has been reconstructed from finds in a grave in Karos.[674] Goldsmiths worked for the elite at the top of the social pyramid. In the eighth and ninth centuries, Sogdian metal art, which followed the artistic traditions of the Persian Sassanids, clearly influences the finest work of Hungarian goldsmiths, on cups, pouch plates and the decoration of plate disc hair ornaments. The potters among the Hungarians arriving in the Carpathian Basin brought with them simple-shaped beakers and pots fired dark grey, and clay pots. Pots were made on simple hand-driven wheels, the walls built by the coiling technique.

Craft products which did not leave sufficient remains to be reconstructed from archaeological finds may be usefully approached via ethnographic analogies. Although the products of spinners, weavers and felt-makers decompose in the ground, their work may be reconstructed from studies of peoples with similar material culture, and of folk art and metal art. Felt plays an important part in the life of the steppe peoples, and the various stages of felt-making are useful areas of study. This wool material was used to make blankets, footwear, warm clothing and tent covers.

Representations of crafts in pictorial sources can also be informative. There are many relevant sources of this type from the West, and some directly relating to Hungary, such as a miniature of the Illuminated Chronicle showing Várad Cathedral under construction.

Principal areas of research

Several issues have opened up through investigations of the social position of craftsmen and women. In the eleventh and twelfth centuries, craftsmen were concentrated around forest domain centres, royal castle domain seats, *curiae* and *curtes* supplying the royal court, and royal and princely residences. The position within society of people engaged in craft work was generally among the servant folk, the *servi*.[675] It may be concluded from documents that there were distinctions among craftsmen even in the early Árpád era, and further functional divisions among them. A key problem has been the determination of who the people engaged in crafts were. In the hunting and extensive animal husbandry that characterised the early Árpád era, there were two levels of craft production. The first concerned simpler implements that the servant folk made for their own self-sufficiency, and the second was the work of craftsmen serving the demands of the landowning classes. The craft-making section of society paid dues to its overlords in two ways: working for a specified time or contributing specified

[673] Például Solymosi László arra hívta fel a figyelmet, hogy a korábban 10. századinak tekintett 86 földrajzi név mintegy 20 %-a 11–12. század, 68 %-a a következő két évszázad hiteles vagy hamis okleveleiben szerepel, 12 %-a pedig csak 1400 utánról keltezhető.

[674] László Révész: Karos-Eperjesszög. Cemeteries I-III. In: The ancient Hungarians. Exhibition Catalogue. Edited by István Fodor. Budapest, 1996. 105.

[675] László Solymosi: Liberty and Servitude in the Age of Saint Stephen. In: Saint Stephen and His Country. A Newborn Kingdom in Central Europe: Hungary. Essays on Saint Stephen and his age. Edited by Attila Zsoldos. Budapest, 2001. 69-80.; László Solymosi: Gesellschaftsstruktur zur Zeit des Königs István der Heiligen. In: Gizella és kora. Felolvasóülések az Árpád-korból. 1. Szerk.: V. Fodor Zsuzsa. Veszprém, 1993. 64-66.

products. Products of a fixed quantity were demanded from craftsmen who worked where they lived. The main evidence for this comes from church-related documents. The servant folk were divided into decades and centuries, each headed by an official (*decurio*, *centurio*, ispán-*comes*). Artisans are found to have become more significant in the thirteenth century, a process associated with privileges designed to build up the towns. Some of the free-artisan population of privileged towns and villages were originally *hospites*. Craftspeople formed the largest section of burghers. Many craftsmen also settled in the early towns, making goods for all kinds of purposes.[676]

The importance of the link between crafts and the royal, ecclesiastical and urban centres, and of its formative role, have long been noted by historians. The medieval town in the legal sense appeared in Hungary at the turn of the twelfth and thirteenth centuries. Before this, some urban functions had been provided by "pre-urban" settlements, places with higher consumption demands than the average, and having in their area venues for the early exchange of goods. Early secular and ecclesiastical centres were served by workshops grouped in their direct vicinity (*suburbium*) or nearby. Excavations (Sály-Lator, Visegrád-Várkert[677]) have produced a variety of finds demonstrating the presence of working craftsmen. In towns and villages with charters, especially those granting trade and market-holding privileges, craftspeople were assured of a living. This was especially true for royal centres where the largest orders came from the king and his court. The presence of the elite had a beneficial effect on crafts, including those whose products were luxury items.[678] In the district divisions found in towns, craftspeople operated in the agglomeration.[679] Another type of settlement was the market place which formed without a feudal centre. Villages of craft-industry servant folk and ethnic groups engaged in trade grew up around these. This type proved incapable of development without the grant of privileges.

In the fifteenth century, when agriculture lost its primacy, the proportion of full-time artisans increased. They made up an expanding section of the urban population, their trades became increasingly differentiated, and purely urban industries emerged; the better-off towns even had a clockmaker. Most crafts were concerned with clothing, food and metal working. There was also increasing stratification by wealth: craftsmen in trades that produced luxury items (goldsmith, swordsmith) and some kinds of food, and some building tradesmen, could make a good living. Most artisans, however, belonged to the middle strata of urban society. There has been a study of distribution by gender for Pressburg and Sopron.[680]

There are several interesting issues concerning the location of craftspeople in towns, well illustrated by a case study for Sopron.[681] The interdependence of different trades made it

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[676] Példaként Budát hozhatjuk fel. A városban, amelyet az 1241-1242-es tatárjárás után alapított IV. Béla, 1255-ben pénzverő műhely működött, amely egyértelműen utal a település jelentőségére. A pénzverőkön kívül egy, az ezüst finomságát megállapító ötvös szakembert is foglalkoztattak: 1292-ben feltűnt a városi esküdtek között Kunc examinator, aki 1295-ben Kunc Prenner comes néven szerepel. A régi stájer szókincsben a Brenner szó jelentése: „az új pénz ezüsttartalmának vizsgálója vagy kipróbálója."

[677] Mátyás Szőke: Die mittelalterliche Burg von Visegrád. In: Europas Mitte um 1000. Band 2. Hrsg. von Alfred Wieczorek und Hans-Martin Hinz. Stuttgart, 2000. 585-586.

[678] A 13. századi Esztergomban a „latin" származású ötvösök mellett egy aranyfonó asszonyra is van adatunk.

[679] Jó példa erre Esztergom Kovácsi elnevezésű, a királyi várostól délkeletre elterülő városrésze. *István Horváth:* Gran (Esztergom) zur Zeit Stephans des Heiligen. In: Europas Mitte um 1000. Band 2. Hrsg. von Alfred Wieczorek und Hans-Martin Hinz. Stuttgart, 2000. 579.

[680] Katalin Szende: Katalin Szende: „mit Irer trewn Arbait geholffen." Frauen und Handwerk in mittelalterlichen Testamenten. In: Simon-Muscheid ed. „Was nützt die Schusterin dem Schmied?" Frauen und Handwerk im 15-19. Jh. Frankfurt am Main, 1998. 85–97.; Katalin Szende: Craftsmen's Widows in Late Medieval Sopron. In: Hietala, M. & Nilsson, L. eds. Women in towns : the social position of urban women in a historical context. Stockholm, 1999. 13–23.

[681] *Imre Holl*: Sopron (Ödenburg) im Mittelalter: achäologisch-stadtgeschichtlichen Studie. Acta Archaeologica Hungariae, 31. (1979) 105-145.

practical to group them together, and this often influenced street names. Thus in Buda there were streets called *Ötvösök* (goldsmiths) and *Posztómetők* (tailors), and in Víziváros beneath it streets called *Kerékgyártó* (wheelwright), *Mészárosok* (butchers) and *Halászok* (fishermen). In Pressburg there were streets called *Lakatos* (blacksmith) and *Késes* (knife maker). Elsewhere, however, several different crafts could be located on the same street. In Király (king) street in Cluj in 1453, the furrier, the joiner, the quiver-maker, the tailor, the carter, the harness-maker, the shoemaker and the fletcher all lived side by side. The proximity of the market may have been a major factor. Considerations of safety and hygiene could also have come into play in the location of workshops. Smiths, tanners, cartwrights and wheelwrights were all to be found in the suburbs. Those plying the same trade in a town tended to band together to create a monopoly. The guild was the body representing the interests of free craftsmen in a single trade in the same town. There were strict regulations governing the conditions for entering the guild and the tasks, rights and obligations of its members. The guild also filled the role of a religious association.

Despite the substantial international and Hungarian literature on the history of medieval Hungarian guilds,[682] some issues require further research. One of these is the question of when guilds came into being. According to some historians, the first Hungarian guilds may have been set up by German *hospites*. Others see the Hungarian guilds as having developed out of religious brotherhoods. Then there is the view that some special activities performed in the town (military, defence) forged the guild into an organisation. The economic boom of the mid-fourteenth century must have been a major factor in their creation. The meagre sources do permit the conclusion that the first guilds formed in about the middle of that century, although some trades may have had some kind of organisation as early as the thirteenth. 1376 was an important year in the history of guilds, when Louis I issued a general decree for the seven Transylvania Saxon *szék*s. The same year, privileges were granted to the butchers, bakers and shoemakers of Pressburg. The momentum of guild development continued into the fifteenth century.

Crafts were also involved in the development of market towns. The Hungarian word for these, *mezőváros*, means town "in the open", or unfortified. Most of them rose above the mass of villages in the fourteenth and fifteenth centuries. Referred to as *oppida* in the charters, only a few dozen could have borne the external features of a town. There were mainly economic reasons behind their creation, better transport having led to the formation of the market. Landlords also supported these settlements, it being in their interests to concentrate trade and crafts in a single centre, but there was no move to establish "true" towns. Townspeople were largely granted a free hand in economic affairs, and could pursue trade in various ways, through which they accumulated wealth. Many of the market towns had the right to appoint their own judge, and had a forum of appeal in the seigneurial seat. There have recently been great advances in archaeological investigation of market towns. One of the main issues is whether archaeological techniques can serve to verify data in written sources. Excavation of craft workshops provides one of the criteria sets for studying the market town way of life.[683]

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[682] A kutatás érdeklődését jól mutatja, hogy már a 20.
század elején megjelent Szádeczky Lajos oklevéltárral egybekötött feldolgozása.
Szádeczky Lajos: Iparfejlődés és a czéhek története Magyarországon okirattárral (1307 – 1848.) I – II. Budapest, 1913.

[683] József Laszlovszky – Zsuzsa Miklós – Beatrix Romhányi – Katalin Szende: The archaeology of Hungary's medieval towns. In: Hungarian archeology az the turn of the millennium. Editor-in-Chief: Visy Zsolt. Managing Editor: Nagy Mihály. Budapest, 2003. 369.; Ígéretes eredményeket hozott a 17. század elején elpusztult Tolna megyei Decs évek óta régészeti kutatása. Miklós Zs. – Vizi M.: Beiträge zur Siedlunggeschichte des mittelalterlichen Marktflecksen Ete. ActaArchHung, 53. (1994.) 195-253.; Zsuzsa Miklós: Spätmittelalterliches Eisendepot aus dem mittelalterlichen Marktflecken Decs-Ete. ActaArchHung 56 (2005), 279-310.

Medieval villages, too, had their own craft industries. The people engaged in crafts, as we have seen, cannot be viewed as artisans completely divorced from agricultural activity. Social and economic developments took their effect here, too. The earlier group industries gave way, in villages, to peasant artisans who satisfied many of the needs of the locals. Smithies were of central importance,[684] and the development of pottery depended on sources of clay.

The legacy of the craftsmen

Excavations are a constant source of new additions to research collections, and work on these is constantly expanding our knowledge. The basis for the discussion of specific craft industries is the divisions in a catalogue of Hungarian guilds, the *Céhkataszter*,[685] but there is space to cover only the main crafts in detail.

Food and chemicals

There were various kinds of workshops that processed food. Written sources show up a sharp differences among the consumption habits of different sections of society. There were few changes in the way grain was processed. First, after it had been harvested, the grain had to be stored. Pits were mainly use for this in villages, although there were also above-ground stores. From there, the grain went to be milled. The simplest means was the quern-stone. Contemporary representations and village excavations give us a fairly precise picture of mills, which are first mentioned in documents in the middle of the eleventh century.[686] The quern was usually mounted on a table-like structure and driven by an arm, of varying length, which fitted into a hole in the upper stone. The lower stone could have a larger diameter. The flour exited via a channel into some kind of storage vessel (wooden trough, basket) placed under the outflow. The millstones could be set to grind fine or coarse. In villages, the mills were located in various structures (reed hut, sunken building, barn-like structure). These could serve the needs of a small community.

There were of course mills with greater capacity. Millwrighting was a trade which passed from generation to generation. "Dry mills" were driven by men or animals. The Carpathian Basin abounds in rivers and streams whose speed of flow ideally suited them to driving water mills. The water was led into a separate channel and dammed, and the energy stored there released to turn the millwheel, which in turn drove the millstones. There were both undershot and overshot mills. Records of court actions have told us much about mill-building.

Bread was baked in several different ways. There was the baking bell, set above the open fire on two or three stones. Most commonly, bread was baked in an oven built of clay, brick or stone. The base of the oven was plastered flat, and the bottom of its round mouth formed into a step. It was protected against the rain by a roof, open at one side to provide ventilation. Where demand was of a higher level, there was a building – a bakery – for making bread. The products were large and small loaves, and wafers made on special iron plates. The wafer was baked from unleavened wheatflour and had a central place in liturgy, embodying the sacrament.

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[684] A Dunántúlon található Sarvaly falu 1530 körül pusztult el. Az ásatások többek között a kovácsműhelyt is napvilágra hozták. *Holl, Imre – Parádi, Nándor*: Das mittelalterliche Dorf Sarvaly. Budapest, 1982. 46–47.

[685] *Éri – Nagy – Nagybákay*: A magyarországi céhes kézművesipar forrásának katasztere. Budapest, 1975. 134–140.

[686] „Molarius cum mola". 1061: a zselicszentjakabi apátság alapítólevele.

Meat was a major part of the medieval diet, and butchers were to be found nearly everywhere. The medieval Buda Butchers' Guild has left us a very good set of sources, much of its archive having survived.[687] A guild privilege issued by Buda Council on 2 May 1481 contains an article which seems to link King Béla IV with a guild charter. It is unlikely that the butchers formed a guild as early as the thirteenth century, but they may have had some form of organisation. In the Buda Statute Book (Articles 105-107), the butchers rank highly, coming after the different categories of merchants, the minters of coins and the goldsmiths, and ahead of all other crafts. Immediately after them in the ranking are trades associated with butchery: game traders, smoked meat traders, fishermen and fish traders. The work of butchers can be reconstructed from animal bones found in excavations. The people of Buda ate beef, mutton, pork, goat, venison, wild pork, wild birds and fish. The prevalence of cattle bones testifies to the clear dominance of beef. The surface of the bones shows signs of cleaving and cutting. Studies have clearly established that these characteristic damage-marks appear identically on similar bones, showing that butchers were consistent in their methods of cutting up carcases.

Chemical activities hardly show up among archaeological finds. The medieval refuse pit of a house in Buda Castle District contained the remains of a round flask used for distillation.[688] The forecourt of Buda Palace yielded fragments of a distillation vessel made of green lead-glazed grey pottery.[689] The fragments belonged to a tall, stone-shaped lid, on whose inner side liquid condensed and was collected in a trough and passed out through a sloping outflow tube. Its precise function is unknown, but it was probably part of a medicine-distillation apparatus, although it could also have been for distilling alcohol.

Metallurgy, metalware and weapons

Iron emerges from both archaeological and written sources to have had a central place in the Árpád-era economy, being the material for most everyday tools and implements and many kinds of weapons. Early medieval ironworks mostly used surface deposits of bog ore. Ironmaking forges were in operation in many parts of the country, particularly the western border and the counties of Borsod and Somogy.[690] The distinctive type of bloomery found at Somogyfajsz may have come with the Hungarians of the Conquest, because no similar design is known of in the Carpathian Basin in the ninth century.[691]

The bloomeries produced a loaf-shaped "bloom" which was only partly iron, and was passed to the forges to be wrought. The iron mined in the Transylvania Ore Mountains and the Slovak Ore Mountains was supplied in the form of rods or rails. Since ore was expensive, iron waste and old iron implements were also melted down. Blacksmiths in villages, market towns and towns undertook different kinds of activities to suit local demands, but almost certainly used the same techniques. The village blacksmith did all kind of metal work, and was also a

[687] A budai német mészárosok 1529-ben Budáról a nyugati határra menekítették néhány oklevelüket, valamint az 1500 – 1529 közt vezetett céhkönyvüket, egy felbecsülhetetlen értékű kútfőt.

[688] *H. Gyürky, Katalin*: Forschungen auf dem Gebiete des mittelalterlichen Buda: ein unbekanntes Wohnhaus und der Ursprung eines Deslillierkolbens. Acta Archaeologica Academiae Scientiarum Hungaricae 34 (1982) 178–211. p.

[689] Péter *Boldizsár:* Ein Destillierapparat aus dem 14. Jh. aus den nördlichen Vorhof des königlichen Schlosses dürchgeführten Grabungen. Budapest Régiségei 26 (1984) 218–219. p.

[690] Ervin Szegedy: Beiträge zur Metalltechnik der IX-XI. Jahrhunderte in Ungarn. AHA 12. (1960), 299-330.; Gyula Nováki: Archäologishe Denkmäler der Eisenverhüttung in Nordostungarn aus dem X.-XII. Jahrhundert. AHA 21. (1969) 299-331.; Gábor Vastagh: Metallurgische Folgerungen aus den Ausgrabungsfunden der Eisenverhüttung des XI-XII. Jh. AHA 24. (1972) 241-260.

[691] A műhelyt egy 6x8 méteres területű gödörben képezték ki, a kemencéket a gödör oldalában mélyítették. János Gömöri: Frühmittelalterliche Eisenschmelzöfen von Tarjánpuszta und Nemeskér. AHA 32. (1980) 317-343.

healer of animals. His workshop had several kinds of implements and tools – punches, axes, swages and plate shears. There was usually a large and a small anvil in the smithy, and the hammer and tongs were the most universal blacksmith's tools. In towns, specialisation set in as early as the thirteenth century: sources differentiate between armourers, spurriers, swordsmiths, cutlers, blacksmiths, nailsmiths, braziers and platesmiths. Iron agricultural implements followed developments in technology.[692]

Bronze, made by melting copper and tin together, could be formed into a great variety of objects. The various techniques and types have been thoroughly explored in the literature. Pectoral crosses, processional or altar crosses, cross bases, candlesticks, censers, lavabos, aquamaniles, fonts, mortars, bells and statues bear witness to the high level of expertise of Hungarian craftsmen.[693] Casting was varied according to whether simple or complex forms were required. The simpler moulds were made of sand or clay, and sometimes carved negative stone moulds. Relatively few moulds have been found on the territory of medieval Hungary.[694] Bronze was melted in specially made furnaces which made use of natural features to provide a flow of air to make the fire hot.[695] The first relics of Hungarian bronze art are imitations of reliquary pectoral crosses imported from Byzantium. The complex form and pattern of the crosses was achieved by the lost wax method. Other pieces, especially those produced in series, do not display such craftsmanship. The casting of some corpuses, for example, was done without any attempt at artistry. Some items can be traced with high probability to the same workshop.

Bell-founding was a special trade, with mystical associations that no doubt derived from the extreme care required in making the mould and the arcane technological secrets involved in casting.[696] An important change in bell-founding appeared around 1200: a clay model bell was made and the outer mould formed around it and fired. The assembly was then taken apart and the mantle replaced over the core, leaving a precise gap into which the bronze was poured. It was difficult to make bells that were properly tuned to each other, and there was a constant search for the techniques, moulds and materials by which the sound of the bell could be improved.

Some workshops at this time were already fulfilling major orders. One of these was established by Konrád in Spišská Nová Ves in Upper Hungary. Traces of a large bell foundry in Visegrád, in the form of clay mantle fragments, have been found to the north east of Solomon's Tower. The Spišská Nová Ves workshop was in operation until 1516, and had a monopoly in making bells and fonts for the Špiš area. The traditions of the workshop were carried on by successive generations who grew up there. The craftsmen developed their own distinctive decorative schemes. Patterns and letters carved from wood were either pressed into the clay mantle or cast in wax and affixed to the finished model.[697] Some of the craftsmen

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[692] Róbert Müller: Die Datierung der mittelalterlichen Eisengerätfunde in Ungarn. (Beiträge zur Entwicklung der Agrotechnik im mittelalterlichen Ungarns.) ActaArchHung 27. (1975) 59-102.; Müller, Róbert: Die bosnische Sense. ActaArchHung 32. (1980) 437-442.

[693] Ilona Valter: La croix processionelle romane de Balatonfüred. AHA 24. (1972) 215-232.; Zsuzsa Lovag: Bronzene Pektoralkreuze aus der Arpadenzeit. AHA 32. (1980) 363-372.; Zsuzsa *Lovag:* Mittelalterliche Bronzegegenstände des Ungarischen Nationalmuseums. Budapest, 1999.

[694] Összefoglalását lásd *Ódor János Gábor:* Anjou-kori öntőforma Majsról. (Adatok a 13–15. századi viselet történetéhez.) Communicationes Archaeologicae Hungariae (1998) 123–137.

[695] A Visegrád-Várkertben feltárt berendezés szájnyílása a Duna felé nézett. Julia Kovalovszki: Bronzeschmelzofen und Gießerei aus der Arpadenzeit (Visegrád, Feldebrő). CommArchHung 1994-1995, 225-254.

[696] Benkő, Elek: Bronzeguß im mittelalterlichen Esztergom (Gran, Ungarn). In: Varia Campanologiae Studia Cyclica. Hrsg. von Bund, Konrad – Pfeiffer-Rupp, Rüdiger. Schriften aus dem Deutschen Glockenmuseum, Heft.6. Greifenstein, 2009. 73-80.

[697] Megfigyelhető az is, hogy egy-egy motívumot évszázadokon át használtak. Jámbor Boleszláv herceg 13. századi pecsétjét a krakkói Szent András kolostorban őrizték, és lenyomatát Johannes Weygel, az iglói műhely

must have been illiterate, because there are cases where they mixed up the letters of inscriptions compiled by others. Other decorative elements made use of metal fittings for belts and clothing, and pilgrim badges.[698]

Many craftsmen in Transylvania were Saxons, and the effects of links to Germany must be taken into account. Bronze workers had a high social status and made a good living.[699] A good indication of their wealth is that they were among the major taxpayers and were able to send their children abroad to be educated. One of the foremost workshops was in Sibiu. The work of bronze craftsmen can be traced from the late thirteenth century. The closure of their greatest competitor in Sighişoara around 1480 was a major boost for their business. This brought quite distant places (such as Székely Land) into their market range. In the second half of the fifteenth century, new foundries were set up in Bistriţa and Braşov. The most famous workshop in Transylvania, however, was that of the Kolozsvári brothers Márton and György, who learned their trade in Italy in the fourteenth century. Their sole surviving work is the statue of St George the Dragon-slayer which stands in Prague. They were renowned for their bronze statues of the sainted kings of Hungary (Stephen, Emeric and Ladislaus), particularly an equestrian statue of St Ladislaus erected in Oradea. The latter was smashed by the Ottomans in 1660.

Pewtering was a highly regarded trade in the late Middle Ages. Since it was common to melt down medieval pewter objects, few of them survive nowadays. Most of the pewter wares mentioned in written sources (jugs and tankards, bowls and cups, plates, flasks, etc.) must have been made be local craftsmen. Most pewter vessels were to be found in the households of well-to-do town dwellers.[700]

The goldsmithing characteristic of the Hungarians of the Conquest came to an end with the founding of the state, although some of its components survived in folk art. The destruction of objects is so complete that products of the eleventh century can only be reconstructed from written sources. Since goldsmiths worked with expensive material and had a high level of skill, they tended to be grouped around the major centres. The foremost of these in the Árpád era was Esztergom, where the Mongol Invasion of 1241-1242 "preserved" some of the workshop apparatus. The metalware destroyed by the Mongols was replaced by imports from Limoges. Craftsmen continued to supply the Hungarian political elite, and a workshop which operated in the court of Béla IV in the second half of the thirteenth century has been identified as the source of several surviving works. An outstanding relic of metal art from outside the centres is a drinking cup with a representation of the *Agnus Dei*, now held in the Hungarian National Museum.

The display of power and wealth which became common in the fourteenth and fifteenth centuries put new demands on craftsmen. Hungarian metalware of the time vied with what was being produced in Western Europe, and craftsmen made bold use of technical innovations and developed their own sets of motifs. Their work was definitely in the "art" category, and they energetically strove for perfection in every detail. There are several surviving pieces from the Angevin era, and some items of the Aachen Treasure are of outstanding significance

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egyik mestere hozta magával. Először a 14. században tűnt fel, de az 1483-ban és az 1500 után öntött egyes harangokon is alkalmazták.

[698] Benkő, Elek: Pilgerzeichenforschung und Pilgerzeichenüberlieferung in Ungarn und in Siebenbürgen. In: Das Zeichen am Hut im Mittelalter. Europäische Reisemarkierungen. Hrsg. von Kühne, Hartmut – Lambacher, Lothar – Vanja, Konrad. Frankfurt am Main 2008., 167-184.

[699] Benkő, Elek: Mittelalterliche Bronzegegenstände aus Siebenbürgen. Ungarn-Jahrbuch 27 (2005) 1-15.

[700] Imre Holl: Zinn in spätmittelalterlichen Ungarn. I-II. ActaArchHung, 39. (1987) 313-335., 48. (1996) 241-260.

for Hungarian metalware.[701] Intensifying foreign relations also took their effect on goldsmiths' work. Close Hungarian-Italian links led to the introduction of filigree enamel into Hungarian art in the early fifteenth century. The most outstanding surviving art objects of the time, the St Ladislaus Herm and Suki Chalice of Győr were made using this technique.[702] Gold and silverware, easily-movable pieces of very high value, were regarded as repositories of material security, to be hidden in case of war. Analysis of hoards by various criteria can provide answers to many key questions.

Leather-making and leather-ware

Animal hides were used for a wide range of purposes, but their preparation involved two principal techniques. The Hungarians may have brought one of these, alum tanning, when they came to the Carpathian Basin. Hair was removed by knife and then the hide was coated with alum and salt, and dried. Then it was coated with hot tallow and held above glowing embers. This caused the pores to open and be filled with tallow, giving the leather a white finish. Alum-tallow Hungarian leather was sought after throughout Europe and regarded as a special class of goods in the Middle Ages. The other kind of tanning used, instead of minerals, vegetable extracts. The materials favoured in Hungary were oak, pine and willow bark, horse chestnut wood, gall and Venetian sumac. In general, leather items only survive in very fortunate circumstances. A fifteenth-century shoemaker's workshop has been found in what was at that time a suburb of Pest (Molnár Street), and from the (dog) faeces found in the pits it is easy to understand why the trade could not be carried on within the city walls.

Textile and garment industries

The ancient ways of making textiles did not change during the Middle Ages. There were two main raw materials: animal (lamb's and sheep's wool) and vegetable (flax and hemp). The coarseness of Hungarian textiles restricted their use mainly to blankets and similar items; finer broadcloth was imported into the kingdom. The operations may be inferred from ethnographic analogies. Written sources show evidence of the diversity of the textile trade.

Hungarian weaving developed at the end of the fourteenth century. King Sigismund recognised its significance, and attempted to make Košice a centre of the weaving trade. In the fifteenth century, there was a great demand for peach-stone pattern linen, made by weaving with dyed yarn. The most popular motifs were various forms of rosette and star, animal figures set among floral decoration, birds, and stylised lettering.

Construction materials, building and timber

The production of materials for building involved various technologies. Stone came largely from quarries, but re-using stone from abandoned buildings was also common. As with ore mines, the difficulty in studying medieval quarries is that later working removed all earlier traces. Nonetheless, there are a few fortunate cases where medieval traces have been found. A major factor for location of quarries was the proximity of running water, which was almost essential for transport. The larger blocks were usually carved at the quarry. There were various carving techniques specific to different kinds of stone. The stonemasons bore personal

[701] Imre Takács: Königshof und Hofkunst in Ungarn in der späten Anjouzeit. In: Sigismundus. Rex et imperator. Kunst und Kultur zur Zeit Sigismund von Luxemburg 1387-1437. Aussstellungskatalog. Herausgegeben von Imre Takács. 2006. 68-86.

[702] I. László (1077-1095) magyar királyt 1192-ben avatták szentté. Kultuszának központja Várad volt, ahol eltemették. Etele Kiss: Die Anfänge des Drahtemails. In: Sigismundus. Rex et imperator. Kunst und Kultur zur Zeit Sigismund von Luxemburg 1387-1437. Aussstellungskatalog. Herausgegeben von Imre Takács. 2006. 279-283.

liability for their work, as recorded in masons' marks. Stones were fixed with mortar, which required lime. The first references to lime pits in Hungarian sources date from 1222. Burnt lime was transported by cart or made on the building site. Archaeologists have found many lime kilns of different types. Traces of brick making have been found in several places. In the Great Plain, kilns were certainly built above ground. The Dombóvár-Szigeterdő brick kiln has been dated to the Árpád era.[703] Bricks from here were used to build a nearby thirteenth-century donjon.

Sometimes written sources also come to our aid here. A document issued by the Chapter of Veszprém on 5 May 1387 sets out an agreement between the Mother Superior of the Veszprémvölgy Convent and a master mason named Konch.[704] This specifies in detail the work to be carried out and the number of buildings to be built. When Pressburg Castle was rebuilt in 1434, an account book recorded many details of the organisation responsible for the work. [705] There was a separate group charged with the administration of the works. At the top of the hierarchy was György Rozgonyi, head of the county of Pressburg, but the works were supervised by János Kakas, the "agitator" (*sollicitator laborum*). He was assisted by a clerk, a tally-clerk, a lower-ranking foreman, and three workshop assistants. The tradesmen were supervised by Konrád Erlingi (*magister lapicidarum*). There were many trades – stone-breakers, carpenters, blacksmiths, coopers, ropemakers and painters – involved in the work. On average 220-240 people worked on the site.

The forests supplied ample material for the timber trades. The carpenter had to have a wide range of skills. He put up wooden structures for buildings, scaffolding and roofs. He also made the log structures for wells and the wellheads.[706] Surviving wooden artefacts tell of diverse forms, progress in technique, and varying demands. Excavations in Buda Castle have turned up large numbers of wooden objects used in the kitchen: salt cellar, leavening trough, wooden spoons, wooden plates and bowls, wooden stoppers, wooden flasks, and bellows. Some of these were turned on a lathe, others are barrel-like products made with staves and hoops. A fine carved bookcase and the "Matthias stalls" at Bártfa are products of the advanced workshops which appeared in the late medieval period. Foreign influences are perceptible in some workshops. The altar maker Paul "of Levoča" in Špiš studied in the workshop of Veit Stoss in Krakow. Transylvanian Saxon furniture shows a direct link with contemporary south German and Tyrolean furniture.

Bone carvers used similar techniques, just different material, and it is possible they worked together with woodworkers in the same workshop. The Buda workshop stands out from the rest, and the site has been successfully excavated, yielding items related to various different stages in the working process. Chessmen are characteristic finds of royal or baronial residences (Visegrád, Pomáz-Klissza, Diósgyőr, Nagyvázsony). The fine proportions of bone artefacts were achieved on the lathe. The remains of semi-finished products found at Visegrád have further refined our picture of bone craftsmanship. Bone belts occur quite frequently in medieval graves.

Glass was used both in construction and for household objects. The raw materials of glass were sand, sandstone powder and potash recovered from burnt beech wood, and were

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[703] *Miklós Zsuzsa:* Dombóvár, Szigeterdő – Medieval Brick-kiln. In: Archaeological Investigations in Hungary 1999. Edited by Erzsébet Marton. Budapest, 2002. 155–163. p.

[704] Zsigmond-kori oklevéltár I. Szerk.: *Mályusz Elemér – Borsa Iván.* Budapest, 1951. 53. reg.

[705] Franz Bischoff: Französische und deutsche Bauhandwerker in Diensten Sigismunds von Luxemburg. Zur Identität des Preßburger Meisters Konrad von Erling. In: Sigismundus. Rex et imperator. Kunst und Kultur zur Zeit Sigismund von Luxemburg 1387-1437. Auststellungskatalog. Herausgegeben von Imre Takács. 2006. 246-250.

[706] Zsuzsa Miklós: Die Holzfunde aus dem Brunnen des Spätmittelalterlichen Paulinerklosters von Márianosztra-Toronyalja. AHA 49. (1997) 103-138.

converted into glass products in the "glass house".[707] The materials were first put into the frit kiln at relatively low temperature, melted in another kiln and cooled in a third. Glassblowers dipped a pipe into the liquid glass and blew it into vessels. There was a perceptible boom in the glass industry in Hungary in the fifteenth century. Until then any domestic initiatives had been swamped by the mass of imports, especially from Venice. As part of a policy of weakening his enemy economically, Sigismund attempted to keep Venetian goods out of the lands under his control. This opened up the market to domestic glass makers. Master glass makers also came from Italy: Antonius Italicus was working in Óbuda in 1438-1439. The court demand for glassware was satisfied by the recently-excavated glass house in Visegrád.[708] Venetian glass remained the standard to look up to: Buda excavations have discovered fragments of vessels that imitated Venetian forms.[709] The quality of products was very uneven, and those found outside the main centres are generally of much lower standard.

Other crafts

Pottery is the subject of scattered mentions in written sources, but is a ubiquitous and often the dominant part of archaeological finds. Archaeologists have long perceived the methodological potential in these.[710] Because of the demand from every household, potteries were to be found in nearly every town and village. Although potters' basic ways of working did not fundamentally change for centuries, some technical innovations are perceptible in Hungary. There were two kinds of cooking vessel in the Árpád era: the ceramic pot and the clay pot. The latter was hardly used anywhere outside the Carpathian Basin. Its shape, with a rounded base, was copied from the metal cooking pot. There were clay flasks and bowls and small ceramic pots (beakers) for serving and consuming food. Until the early thirteenth century, pottery was generally a village handicraft. Potters served the needs of their immediate locality, and did not compete with each other. The development of urban crafts changed this situation. Vessels thrown on fast, foot-driven wheels, made from new kinds of clay that fired to a light colour, appeared on the market and led to the abandonment of the old techniques. Major technical changes in pottery started to appear in the fourteenth century. This was related to the higher standards and increasing volume demanded by the rising urban population. The coiling technique used in the Árpád era could not satisfy these. The change did not of course take place overnight, and the old techniques clearly persisted for a long time. The main innovation was the fast-turning heavy potter's wheel, mounted on a solidly-built structure standing on legs with a lower cylinder or batten. The rapid rotation resulted in a more regular shape and even wall thickness, with a smooth surface over the whole piece. Decoration became more sophisticated: designs scratched in erratic lines gave way to regular ribs, and the rim was formed into a pattern. Polychromatic glazes led to products of much higher aesthetic standard. By the fifteenth century, Hungarian potters were able to satisfy nearly every demand, as the wide diversity of finds bears out. Only highly durable cooking pots and special-function large storage vessels and crucibles had to be imported. Potters

[707] *Katalin, H. Gyürky:* The Use of Glass in medieval Hungary. Journal of Glass Studies 28. (1986) 70-81.
[708] Orsolya Mészáros: Archaeological remains of the medieval glass workshop in the 15th-century royal residence Visegrád, Hungary. In: Glashüttenlandschaft Europa. Beiträge zum 3. Internationalen Glassymposium in Heigenbrücken/Spessart. Hrsg. Von Flachenecker, Helmut – Himmelsbach, Gerrit – Steppuhn, Peter. Regensburg, 2008, 168-172.; Orsolya Mészáros – Mátyás Szőke. The Fifteenth-Century Glass Workshop in Visegrád. In: Matthias Corvinus, the King. Tradition and Renewal in the Hungarian Royal Court. 1458-1490. Exhibition catalogue. Editors: Péter Farbaky, Enikő Spekner, Katalin Szende, András Végh. Budapest, 2008. 345-347.
[709] Katalin H. Gyürky: Venezianische und türkische Importartikel im Fundmaterial aus der ersten Hälfte des 16. Jahrhunderts. Acta Archaeologica, 26. (1974), 414-423.
[710] Miklós Takács: Die arpadzeitlichen Tonkessel im Karpatenbecken. Budapest, 1986.

sometimes based their designs on the work of other crafts. In search of new forms, earthenware cups were made in imitation of contemporary metal and glass cups.

King Matthias' ambitious building projects required potters that could produce building ceramics, and some of them came from Italy. The Buda Majolica ware workshop[711] was founded by the faience master Petrus Andreas, but his associates included Hungarian potters. The floor bricks, vessels and mixed-glaze stove tiles used to fit out the royal palace bear the traces of Italian technology. Some of the ornaments also followed Italian precursors, but the cups reflect the local Gothic style (in Buda).

Potters were also responsible for the main components of tile stoves, a means of heating which first appeared in the area of northern Switzerland and south Germany in the twelfth century. It was originally made of plate-like elements, later replaced by ceramic tiles. These were usually square or rectangular, and could be decorated. Tile stoves became very widespread. Comparative studies have distinguished workshops with their own formal vocabulary and different manufacturing techniques, and shown up their interactions.

Crafts in medieval Hungary make up a very diverse picture, but with some remaining blank patches, owing to lack of sources. Craft industry was an organic part of everyday life, and the products and services of craftsmen were used by every section of society. Craft industries came under all kinds of influences, and wandering craftsmen accumulated diverse impressions. Chief among the formative influences were the customer base, social position and financial base.

[711] Eszter Kovács: Maiolica Ceramics from Buda – the Buda Maiolica Workshop.; Gabriella Fényes: Maiolica Floor Tiles from Buda Palace. In: Matthias Corvinus, the King. Tradition and Renewal in the Hungarian Royal Court. 1458-1490. Exhibition catalogue. Editors: Péter Farbaky, Enikő Spekner, Katalin Szende, András Végh. Budapest, 2008. 351-353., 354-356.

Coinage and financial administration (1000-1387)

Csaba Tóth

Period of study

A tradition established by monetary historians in the early nineteenth century divides Hungarian medieval coinage into two periods. Hungary started to mint its own coins around 1000, marking the start of a period which lasted until the turn of the thirteenth and fourteenth centuries. It covers all coins minted by the kings of the House of Árpád until the dynasty died out in 1301 and extends into the reign of Wenceslas and (1301-1305) and Otto (1305-1307). The second period was the age of kings of different houses, the elected kings, from Charles I (1301-1342) up to the death of John Szapolyai (1526-1540). This periodisation is in harmony with international coinage systems, which are named after their main denomination. The denar period roughly corresponds to the Árpád era, and the *grossi* period to late medieval Hungary. This chapter traces the minting of coins through the Árpád and Angevin eras. The Árpád era is treated as a unit, even though by monetary history criteria – minting techniques, financial administration, the characteristics of images on coins – it could be divided into two periods, the first spanning the eleventh and twelfth centuries, and the second the thirteenth. The Angevin Era is also an independent period in Hungarian monetary history, ending with Sigismund's ascent to the throne in 1387, marking the start of another new era in Hungarian coinage.

Sources

Although numismatics stands as an area of research of its own, the full depth of Hungarian monetary history only emerges from the joint use of documentary and material sources. The relative importance of different types of source naturally changes over time. Material sources are gradually overshadowed by written sources, but remain essential for the whole of the Middle Ages.

Material sources

The primary material sources are the coins themselves, both those of unknown provenance held in collections and those from excavations, including hoards, fragmentary finds[712], grave finds and sporadic finds. The other group comprises all materials related to the process of minting coins: dies, blanks, crucibles, remains of built structures related to minting (standing or excavated mints and their furniture), and a very small number of pictorial representations, all of foreign origin, and thus not covered here.

Coin types

As source publications are for diplomacy, type catalogues – also known as coin corpuses, are the basic reference books for descriptive numismatology. These contain an image and description of each coin, covering main types and main variations of inscription, depiction and mint mark. Hungarian numismatics is well up to date in this field. Indeed,

[712] Some of the hoards can be regarded as fully recovered, while some, we know, are only parts of larger hoards, not fully recovered.

István Schönvisner had the benefit of much previous work when he produced the first general work on Hungarian numismatics in 1801,[713] which he followed up a few years later with a catalogue of the Széchenyi coin collection in four volumes (three text, one illustrations), which formed the basis for the Coin Collection of the Hungarian National Museum.[714] József Weszerle produced a manuscript on numismatics based on an enormous study of material, but his early death prevented its publication. It remains in the Hungarian National Museum, and the engravings for the catalogue were published only in 1873.[715] Jakab Rupp, carrying on where Weszerle left off, studied a range of coin types wider than any before. His coin descriptions followed a rational scheme, and he attempted to find foreign precursors and parallels of the inscriptions and images on each type. His catalogue appeared in two volumes, one on coins of the House of Árpád (1841) and the other on late medieval coins (1846), with text in Hungarian and Latin.[716] These were the predecessors to the "the Corpus", the coin catalogue produced by László Réthy of the Hungarian National Museum. Its two volumes (covering Árpád-era and late medieval coins) form the basic reference that remains in use today.[717] New types continued to accumulate after the "Corpus" was published, and in 1979, Lajos Huszár produced a new compilation, this time in German.[718] This is distinguished by the inclusion of mint marks as well as types, and in a break from past catalogues presents the coins in chronological rather than typological order. Almost in parallel with this, Artúr Pohl published catalogues of mint marks on late medieval Hungarian coins, identifying each letter of each mint mark and attempting an interpretation.[719] Popular among both coin collectors and professional archaeologists is the Magyar Éremhatározó,[720] (Hungarian Coin Guide), which has been printed in several editions, although its illustrations are drawings, which was a backward step. It has the great advantage, however, of including coins from places outside Hungary, such as Slavonia. Also of great help to Hungarian research are foreign catalogues such as Ivan Rengjeo's on the denars of the Ban of Slavonia,[721] and Austrian corpuses on Friesach and Vienna denars.[722] The latter is of particular interest not only because of the large numbers of Friesach and Vienna denars which turn up at Hungarian archaeological sites; they were also highly influential on Hungarian coinage in terms of appearance (motifs) and standard. Indeed we know of Hungarian reproductions and counterfeits.

In the thirty years since publication of the Münzkatalog, the number of coin types has continued to proliferate, mainly because of the coins having been turning up at auctions which have become increasingly common since they started in the early 1990s, and partly because of the abrupt increase in the number of metal-detector users. These have combined to bring many new types and versions to light: at least three dozen new types from the late Árpád era and Angevin era, and innumerable variations and hybrids of varying significance.[723] All of these are only now being entered into the history of the coinage. Related objects of study are the dies used for striking the coins, of which we have a total of four from our periods: one

[713] Schönvisner 1801.
[714] Schönvisner 1807
[715] Weszerle 1873.
[716] Rupp 1841-1846.
[717] Réthy 1899-1907.
[718] Huszár 1979.
[719] Pohl 1974, 1982.
[720] Unger 1960.
[721] Rengjeo 1959.
[722] Koch 1994.
[723] See e.g. Tóth 2003-2004.

from the eleventh century, two from the twelfth and one from the fourteenth.[724] The only archaeologically excavated mint on the territory of modern Hungary is in Visegrád.[725]

Coin finds

Hungary is up to date with corpuses, but lags its neighbours in the compilation of coin-find surveys. In recent decades, Austrian, Romanian, former Yugoslav and Slovak numismatists have produced important surveys.[726] In Hungary, however, with a few exceptions, it is customary only to publish compilations on hoard horizons related to short periods or to a certain types of find.[727] Among the few exceptions are compilations by István Gedai of foreign coin hoards deposited in Hungary between the eleventh and thirteenth centuries[728] and occurrences of Árpád era bracteates. There are also some regional repertories, and compilations basically focused on other types of objects but using coins for dating. A refreshing exception is the compilation by Ernő Saltzer, although it can only be used with the corrections made by László Kovács. [729]

Written sources

We have no written sources on the beginnings of Hungarian coinage, and almost none from the whole of the eleventh and twelfth centuries. The earliest sources referring to the use of coins are laws and ecclesiastical council resolutions from the reign of Stephen I, Ladislas I, Coloman and Andrew III, stipulating fines and blood money in various denominations.[730] A unique document is a set of accounts from the reign of Béla III listing the crown revenues, including the profit made on minting coins.[731] Most early references only indirectly involve minting, usually in some judicial context. Disputes as to the rightful recipient of tithes from minting, the profit from minting, recoinage, and the movements of money changers, especially in connection with exemptions (e.g. the Diploma Andreanum) and diplomas throw light on financial administration, and there is also relevant data in the Golden Bull (1222) and the Agreement of Bereg (1233). There are also only scattered mentions on the persons in charge of financial administration and cases of counterfeiting. Various customs regulations also throw light on the circulation of money.

Registers of papal tithes, especially for the period between 1332 and 1337, and to a lesser extent for the thirteenth century and the 1370s, contain a wealth of information on monetary history.[732] The several dozen names of coins, the accounting currency and the long-unexplained coin values and exchange rates have caused much head-scratching for (economic) historians since their discovery. Some named coins can be identified with those in other written sources and with surviving coins themselves. Comparable with the papal tithe registers are the accounts of the Chapter of Transylvania (or Chapter of Gyulafehérvár, Alba Iulia, Romania), which unfortunately survive only for one year, 1331.

Minting orders and chamber leases, documents of a kind which have not survived at all from the previous period, are the most important sources for the monetary history of the Angevin era. The earliest source of this kind is an order to the Chapter of Gyulafehérvár,

[724] Gedai 1985-1986.
[725] Tóth 2004.
[726] Velter 2002. Mirnik 1981. Hlinka et al. 1964-1968-1978.
[727] Tóth 2007.
[728] Gedai 1969.
[729] Saltzer 1996. Kovács 2005-2006.
[730] Cf. brief surveys by Huszár 1934, Huszár 1971–1972a, Gedai 1979.
[731] Hóman 1916, 424–436. Barta – Barta 1993. The authenticity of the source was debated.
[732] Mon. Vat. I./1.

dated 6 January 1323, which reports the minting of new coins of stable value. This document marks the start of Charles I's financial reform. It specifies the base of the coins and the rate of exchange and provides reliable information on how the administration of minting was to be reorganised. Similar to this is a decree of 1330, which survives in a copy sent to the county of Ung. It specifies the base of the denars to be issued that year and provides for the redemption of old denars and the administrative details of the exchange.

There are seven chamber leases surviving from the Angevin era (26 March 1335: Kremnica chamber lease; 25 March 1336: Transylvania chamber lease; 29 March 1338: Smolník and Kremnica chamber lease; 2 February 1342: Pécs-Syrmia chamber lease; 1344: Zagreb chamber lease (Ban's mint); and 2 February 1345: Pécs-Syrmia chamber lease).[733] These comprise a category of their own, telling us the base of the currency at the time and the rent and the name of the chamber count, as well as throwing light on every aspect of each chamber and mint from the geographical extent of their powers in each county of the kingdom down to the tiniest detail of the inspection of the mint. Unfortunately, we know of such documents only from two decades, and there is no similar source of Hungarian monetary history before or since.

Numismatic research past and present

The first thing that must be said about Hungarian monetary history is that those engaged in its research stand somewhat apart from other historical disciplines. Alongside the very small number of "professional" numismatists, a large number of coin collectors, strictly "amateurs", have produced very substantial work, if of greatly varying standard. Another feature is the uneven depth of treatment: some themes, like the beginnings of minting in Hungary, or the monetary reforms of the Charles I era, have always attracted a lot of attention and have thus been thoroughly researched, while the whole of the twelfth and thirteenth centuries and – despite some developments in recent decades – the second half of the Angevin era have been somewhat neglected.

Emergence of minting in Hungary

Hungarian numismatic research started in the eighteenth century with collection and identification of the various types of coins. A series of catalogues, first of collections and later of types, laid the foundations for deeper research into monetary history, one of whose focal points was the beginnings of Hungarian coinage, a subject around which there is now an enormous body of literature.[734] Since there are no surviving written sources on this period, research has always relied on artefact studies. The coins of Stephen I (997-1038),[735] with STEPHANVS REX on the obverse and REGIA CIVITAS on the reverse, were identified in the early 1700s. By the mid-twentieth century, almost every possible aspect had been covered in the literature,[736] but the debate flared up again in the 1960s, when Gyula László reviewed the subject,[737] followed by international scholars who attempted to link other types of coin to Stephen I.[738] This led to the curious state of affairs that these coins are regarded as Hungarian by them and foreign by Hungarians.[739]

[733] Érdy 1870. Szekfű 1911. Hóman 1921, 258–259. DRH I. 77, 86–89, 90–94, 95–102, 107–115, 116–123, 118–123.
[734] Gedai 1986. Cf. Kovács 1988.
[735] Gedai 2001.
[736] Hóman 1916. Huszár 1938.
[737] László 1962.
[738] Hatz 1965, Gedai 2007, Turnwald 1965-1966, Turnwald 1967-1968, Suchodolski 1990.
[739] Huszár 1966.

The debate took on new momentum with the discovery of a hoard in Nagyharsány, Baranya County, in 1968. This included forty coins of a type that had formerly been regarded as modern forgeries or contemporary imitations. On the obverse is an arm holding a lance surrounded by the inscription LANCEA REGIS, and on the reverse a Carolingian church with the inscription REGI CIVITAS. Investigations into the hoard showed conclusively that this was almost certainly Stephen I's first coin, and so the order of coins issued by the first Hungarian king had to be revised accordingly.

One unresolved question surrounds a golden coin weighing 4.5 g (the weight of the classical antique solidus), thought to date from the 11th century and possibly linked to the reign of Stephen I.[740] Three of these are definitely known, and a fourth has been published, but only a drawing; its location is as yet unknown. There is a front-facing haloed portrait on the obverse and reverse, with the inscriptions STEPHANVS REX and PANNONIA respectively. The present view is that the coin is medieval and not a modern fictive piece, although further information would be required to determine why and when it was minted. It may not have been intended for circulation, and have been issued in connection with the cult of St Stephen which was evolving in Hungary.

What is still regarded as the core work on Árpád era minting is a great monograph by Bálint Hóman,[741] drawing on enormous range of sources, which covers the financial affairs and coinage of the Árpád era and sets out the subsidiary topics pursued by research ever since. Apart from László Kovács's large-scale monograph on coinage and hoards from the period from Stephen I to Béla II,[742] there has been no major book on eleventh and twelfth century coinage since, although there have been studies of specific areas.

Coins and minting techniques in the eleventh-twelfth centuries

Hungarian coins of the eleventh and twelfth centuries are linked by their special minting techniques and privy marks. The dies for early Hungarian coins were punched rather than engraved. This means that needle punches of various sizes were hammered on to the die to make the image and the legend; this technique gave way to engraving only during the reign of Andrew II. The other distinctive feature is the system of privy marks – auxiliary marks separate from the image and legend. They first appeared on coins minted during the reign of Andrew I (1046-1060) and continued in use until the turn of the twelfth and thirteenth centuries, although they are also found in a degenerate form on coins from the early reign of Andrew II. Each type has several dozen different privy marks, and some have several hundred. Various explanations for their use have been proposed, the most durable being that they were control marks used in the process of minting. Work has recently started on putting privy marks in order and publishing them.[743]

The copper coins issued during the reign of Béla III (1172-1196), a unique development in medieval Hungary, remain shrouded in mystery despite the series of research findings on them.[744] Copper coins basically fall into two types. "Byzantine" coins have two front-facing kings seated on thrones on the obverse and the seated figure of the Virgin Mary on the reverse. The legend is only a partial help in identifying the figures on the obverse: the figure marked REX BELA is clearly Béla III, but the other, marked REX SANCTUS, is probably one of the "sainted kings", perhaps Ladislas I (1077-1095), whom Béla III had

[740] Gedai 1999.
[741] Hóman 1916.
[742] Kovács 1997.
[743] Tóth 2006.
[744] Velter 1996. Suchodolski, 1999.

canonised in 1192.[745] "Arabian" copper coins have an image that imitates kufic script, but is completely meaningless.

Early Hungarian coins had very simple images. Initially the principal motif was a cross with equal-length arms surrounded by a legend referring to the kingdom (REGIA CIVITAS, PANNONIA, PANNONIA TERRA). The first – somewhat schematic – royal portraits appeared during the reign of Solomon (1063-1074), and nearly all subsequent monarchs had at least one type representing the king. At the turn of the eleventh and twelfth centuries, during the reign of Coloman (1095-1116), coins started to be minted with fundamentally different images. As the coins became smaller, the legends disappeared to be replaced by various non-figurative, mostly geometrical signs. The lack of an inscription prevents definite identification of the issuer, and the expression "anonymous denar" became common in the literature. Although every king from Coloman to Emeric (1196-1204) had at least one coin type bearing his name, the vast majority of twelfth century coins are undatable anonymous denars.

Coins, circulation of money, and minting in the thirteenth century

Minting technique and financial administration in the Árpád era went through fundamental changes during the reign of Andrew II (1205-1235), and coins were minted with new kinds of image. Friesach denars – discussed below – were instrumental in the adoption of figurative representations. Royal portraits, buildings, ecclesiastical symbols, and real and mythical animal figures were joined by various heraldic elements: the shield with barry of eight first appeared during the reign of Andrew II, and the double cross in the first half of the thirteenth century.

Monetary historiography of the thirteenth century has in recent decades focused on circulation of money, particularly the presence of foreign coins in the Carpathian Basin. Indeed most twelfth- and thirteenth-century hoards are of foreign coins, especially Friesach denars. These were originally very pure coins minted by the Archbishop of Salzburg in the town of Friesach in Carinthia, starting in the middle of the twelfth century. Later, it became a collective term for coins minted on the pattern of the originals by other secular and ecclesiastiacal minting authorities – the princes of Carinthia, the counts of Andeasch-Meran, the bishops of Bamberg, the patriarchs of Aquileja, etc. – in mints spread around the territory of Carinthia and Krajina: Friesach, St. Veit, Pettau, Rann, Gutenwert, Windischgraz, Landstrass and others. This continued through the twelfth and thirteenth centuries and many copies – of variable quality – were produced by mints elsewhere, including Hungary. The importance of Friesach denars in contemporary Hungarian money circulation is borne out by written sources as well as coin hoards.[746] Their first appearance in Hungary may be dated to the late twelfth century, and their circulation reached a peak in the first half of the thirteenth. They do not appear in hoards following the Mongol Invasion.

The chronology of Friesach denars started with pioneering work by Arnold Luschin von Ebengreuth, which was later refined by Egon Baumgartner, Bernhard Koch, Heinz Winter and Herbert Ban to produce a very useful relative chronology, one that in several cases may be regarded as absolute. Their work largely relied on Friesach denar hordes found in Hungary.[747] By comparing the composition of finds with their chronology, it is possible to determine the end-date of a horde to within a 5-10 year interval, although Hungarian and Austrian numismatists do not always arrive at the same dates. V. Székely György, drawing

[745] Ujszaszi 2010.
[746] Gedai 1996.
[747] von Ebengreuth 1922–1923. Baumgartner 1949, 1952. Ban 1992. Winter 2002.

mostly on earlier research by István Gedai,[748] has used this means to distinguish the find horizons of purely, or predominantly Friesach denar-containing coin hoards in Hungary.

Another focal point of study, involving several Croatian as well as Hungarian scholars, is the coinage of the Ban of Slavonia.[749] The Bans of Slavonia started minting coins in the mid-thirteenth century and continued for about a hundred years, during which they made the first breach in the system of periodic recoinage. Both financial administration and taxation are inextricably linked with the concept of "chamber profit" (*lucrum camerae*), a long-researched subject which still lacks a modern synthesis bringing together work on diverse sources. By contrast, there has been a considerable progress in one area of financial control, the *pizetum* right. This right of the Archbishop of Esztergom to supervise minting in order to prevent all kinds of abuse was earlier thought to date from the early eleventh century; it has now been discovered to have been granted only in the mid-thirteenth century. Since its establishment is almost certainly related to decrees against "Ismaelite" (Moslem) and Jewish, i.e. non-Christian chamber counts (tenants of the mint), it is inevitably linked to the issues of the "Hebrew-symbol coins" of the House of Árpád.

Hebrew letters on Hungarian coins

Hungarian coins bore Latin inscriptions from the earliest times. Only in the nineteenth century did German-language, and during the 1848-1849 War of Independence, Hungarian-language legends appear. It is thus curious to find a group of thirteenth-century Hungarian coins bearing Hebrew letters (but not text!). The Hebrew letters on Hungarian coins was noted in the nineteenth century by Sámuel Kohn in his history of the Jews, and in some type descriptions by László Réthy. Nonetheless, they only arose as a subject of research in the 1970s following the publication of a paper by Gyula Rádóczy drawing attention to them. Rádóczy systematically went through their various types, identified each Hebrew character, and attempted to link them with the initials of chamber counts known from written sources. He reached the conclusion that the '*alef*' was linked with Altman, the '*chet*' with Henoch, the '*ef*' with Fredman, the '*teth*' with Theka and the six-pointed star with Samuel. The investigation was quickly joined by Sándor Scheibert and Lóránt Nagy, the latter attempting to use Rádóczy's findings to date late Árpád-era coins.[750] Later, several papers attempted to clarify the issue and determine the persons of Jewish birth who could be linked with the coins.[751] Still not published, however, is the best and most broadly-based treatment of the subject: László Vermes's dissertation[752] restated the problem and identified the tasks for further research.

The first and most important task is to identify the sound value of each character. This is not a straightforward matter, because one symbol can, by rotating it through 90 or 180 degrees, stand for more than one Hebrew character. Another question is the chronological order of each coin. Research in Hungary has so far only managed to link coins bearing the name of a king with his reign, and has not produced a relative chronology of thirteenth-century coins. It is irresponsible to identify Hebrew characters found on the coins with Jewish names (or their initials) known from written sources, or to date a particular coin purely from the mention of a name, because the written source could have been written several decades later than the coin was minted. There is a need to gather data from written sources on ethnic Jews involved in thirteenth-century Hungarian minting, and on what their activities were.

[748] Gedai 1969.
[749] V. Székely 1980. Korčmaros 1997.
[750] Nagy 1973–1974. Scheiber 1973–1974.
[751] Saltzer 1998, Guest 1998. Guest 1999.
[752] Vermes 1998.

Since most of these men of finance migrated to the Kingdom of Hungary from Austria, in fact Vienna, much more data can be found on them there than from the few surviving Hungarian sources. It is not certain, however, that the Hebrew letters on the coins are personal initials in any case, let alone those of Jewish chamber counts. Some other possibilities ought to be examined. The symbols might refer to the contemporary denomination of the coins (which does appear on them), i.e. they could be the Hebrew equivalent of the Latin words denar, obulus, moneta, etc., or they may refer to the place of issue (mint?). The latter deserves particular attention, because it was just at the time when Hungarian minting started to be decentralised – the early decades of Andrew II's rule – that the Hebrew-character coins first appeared.

Coins and minting in the Angevin period

The Angevin era, or at least its first half, has attracted almost as much numismatic interest as the beginnings of Hungarian minting. It was a period which saw the proliferation of written sources directly concerned with minting – which are very rare for the whole of the Árpád era – and the start of large-scale financial reforms, always the object of special attention among numismatists and economic historians. Denominations previously unseen in Hungarian minting began to appear: the gold florin[753] and the silver *grossi*,[754] and there was a complete reform of chamber administration, mining and taxation, putting them on a new legal footing. Chronological lists of Angevin-era coin types appear in two papers by Alfréd Schulek.[755] The first deals with Charles's coins, and the second the financial affairs of Louis and Mary in connection with minting in Buda. The latter appeared alongside Henrik Horváth's art-history study of the development of coin design in the late medieval period, including the Angevin era.[756] Lajos Huszár's 1958 monograph on medieval minting in Buda surveyed the output of the Buda mint from its foundation in the thirteenth century, devoting a whole chapter to a unique episode in Hungarian monetary history, the autonomous issue of coins in Buda during the Angevin era.[757] Bálint Hóman wrote the economic and monetary history of the reign of Charles I,[758] and findings by Ferenc Kováts on the circulation of money in fourteenth-century Hungary remain influential today.[759]

While the literature on the economic policy and minting of the reforming King Charles, who changed the face of medieval Hungarian coinage and issued the gold florin, is enough to fill a library, almost no attention has been paid to the financial affairs of his son Louis I – as he was thought to have confirmed his father's measures. Bálint Hóman devoted a monograph to the financial affairs of Charles's reign, and not a single line to Louis's economic policy. Schulek was the first to produce a chronology of Louis's coins, but it was not on the same scale as his thorough study of Charles' finances. Lajos Huszár basically followed on from Schulek, and although he noticed the distinctive features of the two kings' coinage (the appearance of durable small coins, the change of the image on the gold florin, the revival and later ending of *grossi* minting and the Franciscus Bernardi problem,[760] which greatly influences the chronology of coins), he did not properly incorporate them into his major study of the Buda mint. In the 1980s, historians also started to address the issue. The first was András Kubinyi, whose article on the history of the town which accommodated the

[753] Gedai 1987. Hóman 1917. Huszár 1977. Kováts 1922. Mályusz 1985. Probszt 1957. Probszt 1963.
[754] Huszár 1971-1972b.
[755] Schulek 1926, Schulek 1931-32.
[756] Horváth 1931-1932.
[757] Huszár 1958.
[758] Hóman 1921.
[759] Kováts 1926.
[760] Mályusz 1958.

most important mint of the late medieval and modern periods, Körmöcbánya (Kremnica/Kremnitz, today in Slovakia) covered the transformation of Angevin-era mint administration in the second half of the fourteenth century.[761] He devoted particular attention to Franciscus Bernardi and his associates and the operations of the Szerecsen family, and explained the significance of the Pécs-Syrmian chamber in terms of economic policy and demographics. He pointed out the fundamental changes in Hungarian financial administration during the 1370s.

Kubinyi's student István Hermann expanded on this brief outline, focusing on the financial administration and circulation of the second half of the fourteenth century. He compiled an enormous database on mint personnel and documentary references to coinage types,[762] and this was drawn on by Pál Engel for his study of unsolved issues of the monetary history of the Angevin era.[763] Engel practically rewrote the monetary history of the period, giving a new interpretation of issues like the recoinage system and the standard of each coin, and uncovering a previously-unknown double gold exchange rate (chamber-market). He also discussed details of various forms of accounting currency and how they evolved. The information he discovered was instrumental in reopening the debate on the chronology of Louis' and Mary's coinage.[764]

Gold coins in the Angevin period

Perhaps the most intriguing chapter of Angevin-era monetary history is the minting of gold coins on a scale that sets the country apart from the rest of Europe.[765] Many facets of this have been analysed, although the change in the standard of the coinage has only come to light recently.[766]

It used to be a basic tenet of Hungarian monetary historiography that the standard of the gold florin was steady throughout the Angevin era and afterwards. Hungarian fourteenth-century sources are silent on the issue, – except the chamber leases from 1335 and 1336, when it was specified that Hungarian florins have to be minted „*ad modum florenorum Florencie, de fino auro, sed aliquantulum ponderaciones*" –,[767] and the first credible information on the standard of the Hungarian gold florin dates from the sixteenth century. This states that 69 florins were struck from one Buda mark (= 245.5378 g) of 23 ¾ carat (= 989.58%) purity gold, so that each coin had a raw weight of 3.5585 g and a fine weight of 3.5214 g. This figure is usually projected back to the medieval period.[768]

The constant standard of the Hungarian florin, having long been held as an unassailable principle, came under attack from scientific testing and the publication of previously-unknown sources. The greatest upset was an assay of 141 Angevin-era gold florins (16 Charles I, 81 Louis I, 44 Mary) in the late 1990s. Charles' gold florins were found to have an average gold content of 994‰, the two extreme values being 997‰ and 990‰. This actually surpassed the 23 ¾ carats (989‰) extrapolated to the medieval period. Mary's (1382-1387) gold florins were of an even higher grade: the gold content was consistently high, never below 994‰ and up to 998‰, with an average of 997‰. By contrast, the purity of Louis I's gold florins shows a wide scatter. The earliest type from his reign, bearing a Florentine image

[761] Kubinyi 1981.
[762] Hermann 1984.
[763] Engel 1990.
[764] Tóth 2002.
[765] Mályusz, 1985. Huszár 1977.
[766] Tóth 2003-2005.
[767] DRH I. 86, 91.
[768] Hóman 1916, 98–99. Hóman 1921, 85–86. Paulinyi 1937, 493. It has been republished in Paulinyi 2005, 171–182. Huszár 1958, 32. Engel 1990, 43.

(O: Florentine lily, R: St John the Baptist) was found to have an average purity of 990‰, with extreme values of 996‰ and 986‰. The downward trend continued with Louis' next florin, from the middle of his reign (O: Hungarian-Angevin shield, R: St John the Baptist): its purity averaged 987‰, with extreme values of 993‰ and 977‰. This was still only a hairsbreadth lower than the assumed 23 ¾ carats. A relatively "dramatic" debasement came with coins bearing St Ladislas on the reverse. In addition, the gold content of sub-types with different mint marks showed wide deviations. They had a fineness of 984‰ on average, but 980‰ in some subgroups, and even lower in certain specimens.

The measurements tell us that the standard of gold florins issued by Charles I, Louis I and Mary during the fourteenth century was not at all constant. Charles' and Mary's coins were effectively fine gold, as far as was technically possible, while those from Louis' reign were of fluctuating purity. Although the deterioration has only become apparent through modern scientific tests and only amounts to a few per cent, it would, given the very high value of gold, have been significant even in the Middle Ages. A half-carat difference must have been noticed. The change is not detectable in Hungarian written sources, but recent research reveals it as having been a known fact in contemporary Italy.

The figures for Hungarian coins entered in some Italian merchants' reference books and account books bear out the scientific findings.[769] These frequently mention the Hungarian gold florin, which was of equal value to Florentine florins and Venetian ducats, and the description of the image struck on each variant allowed precise identification. It was crucial for merchants on the great money markets to be able to tell between coins of different forms and values issued by several dozen mints, and know for certain how much they were worth. They therefore had to know all of the identification marks and the exact exchange rate for each coin.

The sources usually give the purity of Hungarian gold florins in carats (24 carats = 1000‰), of which we will examine a few examples:

"Fiorini ungheri del giglio"	23 ¾ carat
(Hungarian florins with lily)	
"E quelli de giglio"	23 ¾ carat
(And those florins with lily)	
"Fiorini unghari di giglio e della mannaia"	23 ¾ carat
(Hungarian florins with lily and battleaxe)	
"Fiorini ungheri di Mannaia, e scudi"	23 ¼ carat
(Hungarian florins with battleaxe)	
"Unghere della manaia e dello scudo"	23 ¼ carat
(Hungarian [florins] with battleaxe and shield)	

These sources thus claim that Hungarian gold florins bearing a lily were 23 ¾ carat (989‰) gold, and those with axe and shield only 23 ¼ carat (968‰). It is easy to recognise from the descriptions the Charles- and Louis-era gold florins having the Florentine lily on the obverse; the Hungarian florins with "battleaxe" and "shield" clearly refer to Louis' coins with a heraldic shield on the obverse and St Ladislas on the reverse. The axe mentioned in the description refers *pars pro toto* to the saint, as confirmed by another reference: "*Fiorini d'Ongaria, […] da l'altra parte santo Ladussalus con una mannaia in mano*…" = Hungarian gold florins, […] on whose other side is St Ladislas with an axe in his hand… The contemporary source thus makes a precise distinction between the "lily" and "St Ladislas"

[769] Oberländer-Târnoveanu, Ernest 2003-2004.

florins and puts the difference in their purity at half a carat. This would seem to clarify the matter, except that we know of no coins with both a lily and an axe (i.e. St Ladislas); for want of better explanation we must put this down to confusion. In other places, the sources hold the lily and John the Baptist florins to be equivalent to pure gold, and so were nominally regarded as fine gold.

The latest research has caused us to re-evaluate our view of the uniform standard of Angevin-era Hungarian gold florins. Both scientific tests and contemporary foreign written sources clearly indicate that the "St Ladislas" gold florin introduced by Louis I contained at least half a carat less pure gold than the florins struck earlier in his reign or during the reign of Charles I. The assays give us the further detail that the gold content was lower only in versions bearing certain mint-marks, and not in all coins of the type. It is interesting that Louis' last gold florin, also bearing St Ladislas, restored the almost pure-gold standard. Italian sources, understandably, do not distinguish between sub-types and mint marks, and hold these coins *en bloc* to be of poorer quality than the older ones.

We do not yet know the reason for the debasement of the coinage during Louis' reign, but it seems only to have been a brief interlude. It was certainly associated with the change in type of gold florins – the appearance of St Ladislas on the reverse. The change could hardly have been a secret among the men of finance of Western Europe, who immediately took note of the phenomenon and adjusted the exchange rate of the new coins. This could not have had a good effect on Hungarian gold's international reputation, and may explain why Louis' late florins were once again made of fine gold, a standard subsequently maintained by Mary.

The precious metal content of post-Angevin Hungarian gold coins is also relevant here, because there is some scattered information on fluctuations in the standard of the coinage in the fifteenth and sixteenth centuries. Assays carried out in the nineteenth century by Carl Schalk showed that the standard of some gold florins from the reigns of Sigismund (1387-1437), Wladislas I (1440-1444) and even Matthias (1458-1490) fell short of 23 ¾ carats.[770] A suspicion of debasement of Sigismund-era gold florins had already arisen from written sources – the 1434-1435 accounts of the Kremnica chamber.[771] Catalan sources mention some early fifteenth century Hungarian coins which they record as 22-carat.[772] Although none of the above examples suggest that the Hungarian gold florin ever severely deviated from its famed excellence, the standard was not quite as steady throughout the medieval period as previously thought. There was no spectacular debasement, only deviations of one or two per cent, equivalent to a quarter or half a carat, but the new data certainly inspire a rethinking of the monetary history of the period.

[770] Schalk, 1880, 194.
[771] Paulinyi 1973.
[772] Oberländer-Târnoveanu 2003–2004.

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Climatic changes in the Carpathian Basin during the Middle Ages*

András Vadas – Lajos Rácz

Climate history research in Western Europe has a long tradition. The first weather compilations are gathered in the 18th century, although research based on critical assessment of sources does not have such a long past; detailed studies of regional climate history and the social history aspects of weather first appeared in the 1960s.[773] Data gathered from historical sources now permit medium- and long-term climate reconstructions for the past thousand years (and even longer in some places).[774] Nothing similar is possible for the medieval climate of the Carpathian Basin. Written sources only appear in substantial quantity in the later medieval period, and even then do not provide enough data for continuous climatic reconstruction. Whereas European reconstructions usually use chronicles and annals, research on the Kingdom of Hungary, with a few exceptions, can only draw on narrative sources with from a climatological point of view inaccurate and scarce data. Written sources on the Middle Ages are mainly important for investigating extreme weather events,[775] although they are also used to research changes in lakes, water courses and their surroundings. The weather-related events covered by written sources are mostly of a hydrometeorological nature: floods, waterlogged land and droughts appear in charters and annals, and may be used to reconstruct the water levels in rivers or standing water, and to indirectly deduce precipitation levels in the catchment area.[776] Research into historic floods has greater potential for the early Modern Times, but it is possible to determine to some extent the nature and frequency of floods of major rivers, especially the Danube and the Tisza, in the Middle Ages. In addition to rivers, studies of some standing water yield useful results for determining weather conditions in certain periods. The shallowness of lakes in the Carpathian Basin (especially Lake Fertő) means that even small water level changes caused drying out or inundation of extensive areas. A study of written sources, mainly charters, relating to conditions of lakes and their surroundings allows us to determine certain dry or wet periods.[777] Such research, however, runs into the constant methodological problem of the significance of the human factor. Nonetheless, study of areas with a dense network of water courses, has considerable, as-yet untapped potential in medieval and early modern environmental and climatic conditions. The relatively wide scope of the written sources does not include the detailed determination of short or long-term climatic tendencies in the Middle Ages; such becomes possible only in the 16th century with the increasing number of written sources and the appearance of new types of sources (private correspondence, diaries).[778]

Scientific research can also be very fruitful, especially for periods for which written sources do not exist or are of poor quality. Most of these are of importance in determining long-term climatic trends, although some also show up some extreme weather events. Dendroclimatological research, despite its promise, at present plays a very modest part in

* We would like to express our special thanks Ionel Popa, Zoltán Kern and András Grynaues for sharing their results with us. We are grateful for the Rachel Carson Center at the *Ludwig-Maximilians*-Universität in Munich and for the Eötvös Loránd University of Sciences for their financial support (TÁMOP-4.2.1.B-09/1/KMR). Our work was supported by the Hungarian National Scientific Fund (OTKA 67.583 and 69138).

[773] For example: Pfister 1984, 1999.

[774] Glaser 2001, and Shabalova and van Engelen 2003, 219–242.

[775] For the most recent overview of the role of written evidence in historical climaotlogy, see: Kiss 2009, 315–339.

[776] Kiss 2009, 323–326.

[777] Kiss 1998. 241–248.

[778] On Hungary: Rácz 1999. For the most recent Central-European reconstruction: Dobrovolný et al. 2010, 69–107.

medieval climatic research of the Carpathian Basin. The only Hungarian medieval climatic reconstruction covering longer period (summer temperature reconstruction based on the Swiss Pines of the Kelemen [Călimani] Mountains, Eastern Transylvania, Romania) gives an account of climatic conditions on an area on the forest fringes of the Carpathians.[779] There is an oak chronology database forming a record of climatic conditions in the centre of the Carpathian Basin, but its raw data were not produced specifically for climatological research. Since at present it goes only back to 1370, only the late medieval climate could be reconstructed from it. The other scientific techniques which have been applied in the Carpathian Basin are mainly suitable for determining trends over periods of decades, in some cases only centuries. The most promising is an investigation of cave ice cores in the Bihar Mountains (Munţii Bihorului, Western Transylvania, Romania). This has made an important contribution to determination of average winter temperature fluctuations in the region over thousands of years.[780] Several similar ice core studies are in progress, holding out the prospect of comparative analyses in the near future.

Palaeobotanical studies permits the determination of rapid environmental and climatic changes, and the relatively large number of such projects permits some general conclusions to be drawn.[781] Sporadic malacofauna studies and other palaeobiological findings in some cases refine the picture of long-term climatic processes. Borehole temperature and stalagmite oxygen isotope distribution studies also reach back to the medieval period, although they are beset by inherent uncertainties in methodology and dating.[782]

These are the two main sources, but archaeology also has an input to the determination of medieval and early modern environmental and climatic changes. It is particularly important in determining fluctuations in the levels of standing water and rivers, dating floods and other hydrometeorological events, and – through research into settlement patterns – the understanding of environmental changes in small areas.[783] At present, however, there are few excavations where the determination of climatic changes and the elucidation of links among settlement location, settlement structure and environmental change have received much attention. Nonetheless, the part played by environmental archaeology in environmental and climate history research can be expected to increase in future.

Different sources permit different time scales for the discussion of climate history in the Carpathian Basin: firstly at the level of weather events, for which written sources are most prominent, then medium-range trends (temperature and possibly precipitation fluctuations over a few years or decades), and finally long-term trends (fluctuations over a century or several centuries). During the late antiquity and medieval periods, three major climatic-environmental changes set the environmental constraints on the historical ecosystems of traditional societies in much of Europe: the cooling of the migration period from the turn of the 4th-5th centuries AD up to the mid-9th century; the Medieval Climate Anomaly (MCA) (also known as the Medieval Warm Epoch [MWE]) from the 9th to the mid-13th centuries, in another approach up to the early 14th century; and finally, one of the strongest periods of cooling of historical times, the Little Ice Age (LIA), from the 14th century to the end of the 19th. To complete the list, we should also mention the recent period of warming which started in the final decades of the 19th century and has demonstrably been affected by global industrial activity.[784] This study covers the environmental conditions of two periods, the Medieval Climate Anomaly and the Little Ice Age. It must always be borne in mind, however,

[779] Popa and Kern 2009, 1107–1117.
[780] Kern 2010, 53–80.
[781] Sümegi et al. 2009, 265–298 and Zatykó, Juhász and Sümegi 2007.
[782] Siklósy et al. 2009, 256–258 and Bodri, Dövényi and Horváth 2009, 421–436.
[783] Bálint 2006 and Pálóczi Horváth 1996.
[784] A recent overview of the problem: Behringer 2007, 119–195.

that the model was developed for Western European areas. Since the climatic characteristics of each era can vary considerably from place to place, the climatic conditions of the East European Plain and Central Europe cannot be exactly matched to the periods observed in Western Europe.

The Medieval Climate Anomaly

The extensive warming which lasted from the 9th century to the turn of the 13th and 14th centuries was first put forward in the 1960s by the founder of British climate history research Hubert H. Lamb (1913-1997). He called it the Medieval Warm Epoch but recent literature rather uses the term Medieval Climate Anomaly.[785] The MCA is one of the most-researched epochs of historical climatology, but historical sources containing climatic and environmental information on Hungary are inadequate to reconstruct this period and the climate of medieval Hungary in general. Before considering the potential of historical sources in researching weather conditions in the Árpád Era, we will discuss the wider results of scientific methods and archaeological studies.

Borehole temperature studies provide the lowest-resolution climatic data series, giving trends over periods of centuries. A recently-published study indicates a five-century warm period in the Carpathian Basin followed by slow decrease up to the last decade of the 16th century, in direct contradiction to the accepted large-area climatic trends in contemporary Europe.[786]

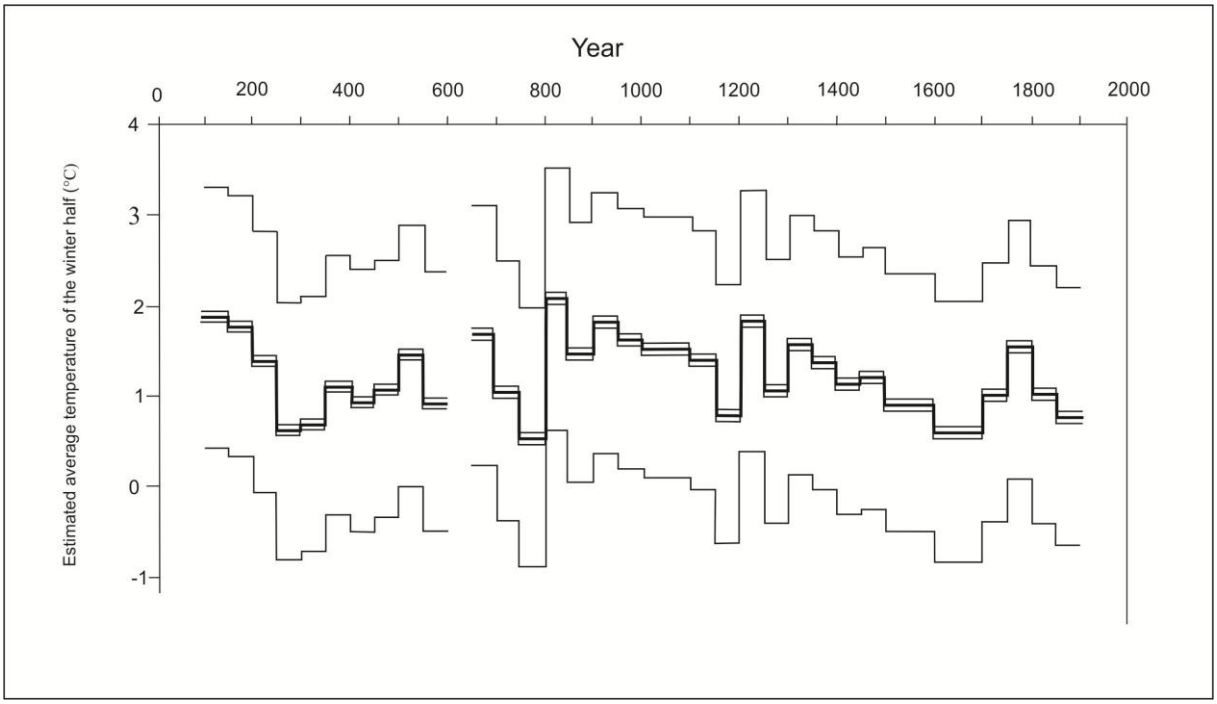

Figure 1: Reconstructed winter six-month mean temperature based on stable isotope data from ice cores in Eskimo Ice Cave in the Bihar Mountains (Munţii Bihorului), 50-year resolution. The errors from the analytic (dark grey line) and calibration (light grey line) uncertainties are shown cumulatively (after data by Zoltán Kern)

It is possible that the proposed dominance of cold winters following the mid-3rd century was broken at the turn of the 8th and 9th centuries by warming, and the milder winter weather became permanent. A stable-isotope ice core study in the Bihar Mountains (Munţii

[785] Lamb 1965, 13–37.
[786] Bodri, Dövényi and Horváth 2009, 429.

Bihorului) has found that the winters in the first half of the 9th century were the mildest in the last two thousand years, with an increase of 1.5°C over the temperature in the previous period (see figure 1). The intensity of the warming later decreased, but mild winter weather remained in the eastern edge of the Great Hungarian Plain, and probably in the entire Carpathian Basin, up to the mid-12th century. Although a short cold period in the late 12th century broke the dominance of mild winters, the first half of the 13th century produced one of the mildest average winter temperatures of the last thousand years. The positive winter temperature anomaly in the first half of the 14th century ended with sustained winter cooling.[787] Similar results were obtained from a complex environmental (pollen, macrofossil and sediment analyses) reconstruction based on the study of layers of Lake Nádas at Nagybárkány (village in the central part of Nógrád county, and in the Cserhát mountain range), which shows definitely mild winter climate in the Northern Range from the late 7th century up to the 13th century (see figures 2 and 3).[788] Although there was a brief cold period around 1100, this area also shows a significantly higher winter temperature than the marked cooling of the Little Ice Age.

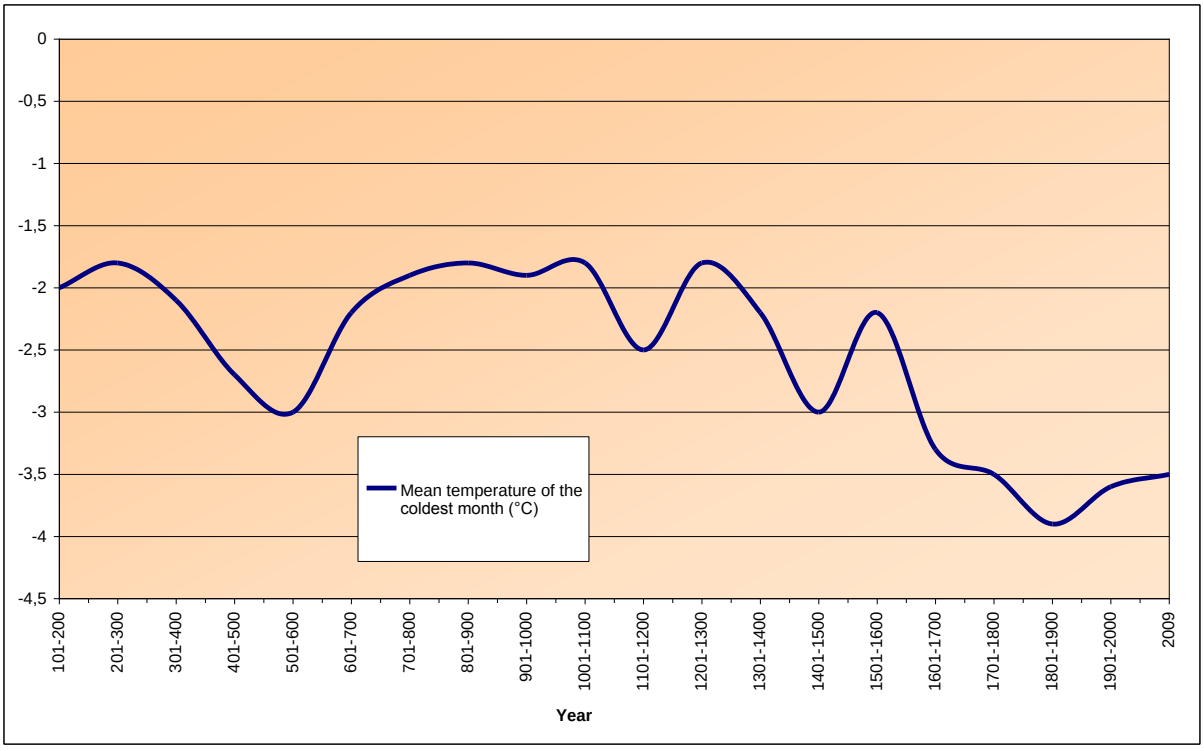

Figure 2: Mean temperature in the coldest month in the last 2000 years in the Nagybárkány area, from pollen, macrofossil and sediment analyses of layers of Lake Nádas (after Sümegi et al. 2009)

[787] Kern 2010, 84.
[788] Sümegi et al. 2009, 285–291.

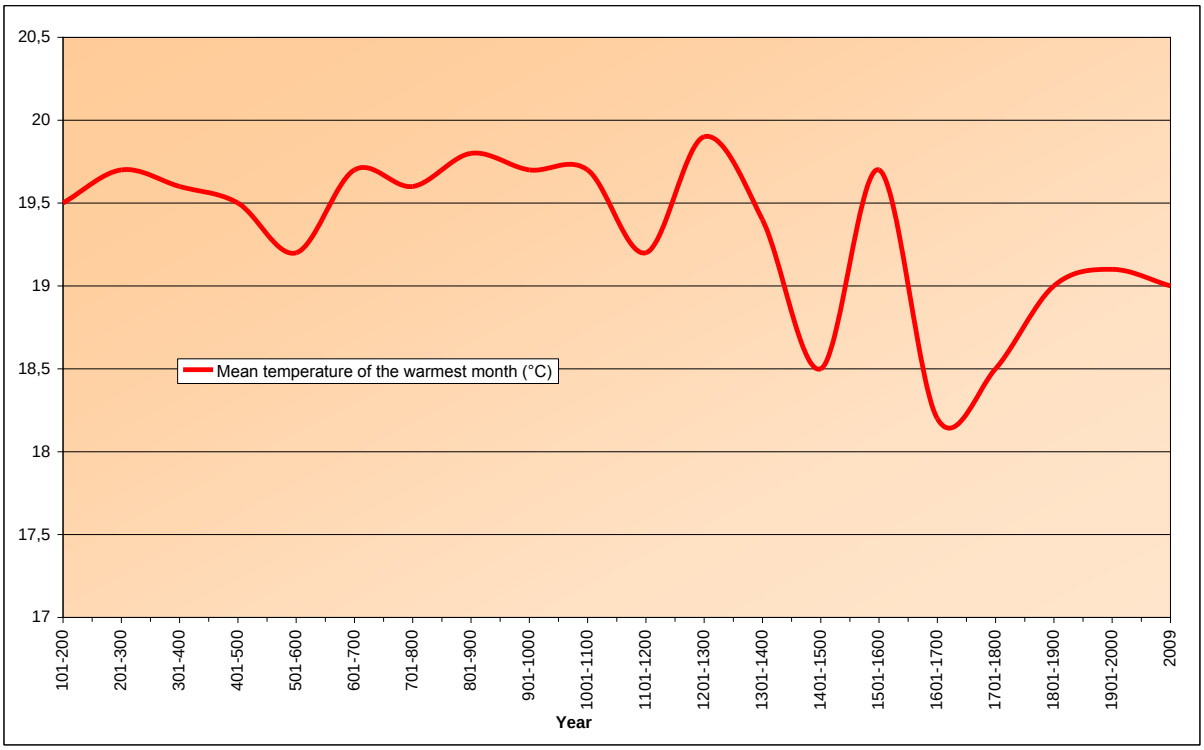

Figure 3: Mean temperature in the warmest month in the last 2000 years in the Nagybárkány area, from pollen, macrofossil and sediment analyses of layers of Lake Nádas (after Sümegi et al. 2009)

The main source for summer average temperature is the Kelemen Mountains (Muntii Călimani) reconstruction (figure 4). This study has found a long cool period in the Transylvanian mountains between 1250 and 1650, although cooling was steady only after the 1390s. From oxygen isotope ice core studies and dendroclimatological reconstructions, the MCA may be approximately dated to between 800 and 1250. The last marked dominance of mild winters in the Carpathian Basin was in the 1220-1440 period, although there is a strong suggestion of even colder winters in the first half of the 9th century.[789]

[789] Kern 2010, 84.

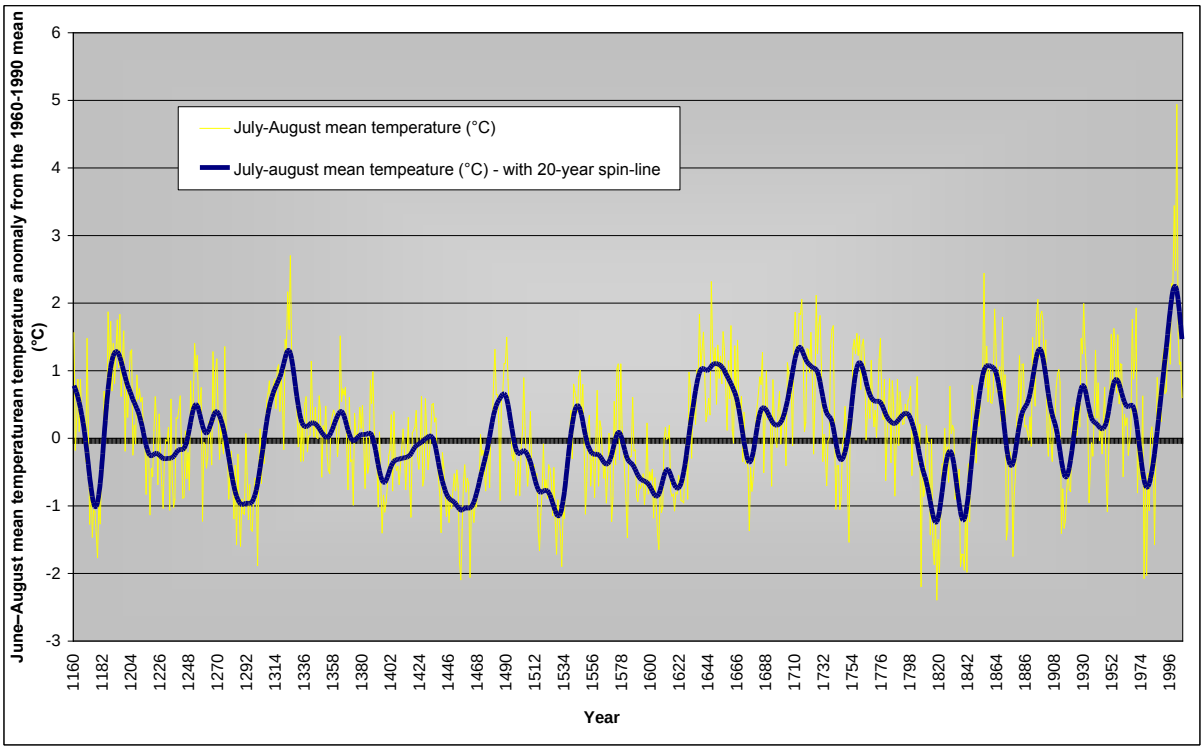

Figure 4. Mean summer temperatures in the Kelemen Mountains (Muntii Călimani) in the last thousand years, from the Swiss Pine dendroclimatological study. Data smoothed by 20-year third-order splines (cutoff frequency 50%) (after Popa and Kern 2009)

The already referred study on Lake Nádas in Nagybárkány has indicated a dry climate during the Árpád Era in the mountain range zone, which peaked when the lake dried out in the 13th century.[790] The authors link the drying out of the lake in the 13th century to sources concerning the Mongol invasion, which sometimes mention severe drought, especially during the summer (see below), but the available written sources form an insufficient basis for any proposal of a long dry period.[791] The relatively dry climate of North Hungary (this historical geographical region is equal to today's Slovakia mostly) in the 13th century is also borne out by the excavation of a well in Szécsény, also in the Cserhát mountain area, where a structure which was demonstrably still in use in the 13th century was built over with a parish church in the 14th century. After the well was filled in, the timber structure rotted down to the average groundwater level at the time it was built; this was about two metres lower than the average in the 20th century.[792] Another indication of dry climate when the well was made is that the timber is not damp-loving peduncular oak but sessile oak, which has greater drought tolerance.[793] Somewhat divergent results have been obtained from a study performed not far from Nagybárkány and the Cserhát area, in the Bükk Hills, where the climate could not have been much different. The first stalagmite isotope distribution study in Hungary has found the MCA to be shorter than the 250 years most frequently mentioned in the literature, and puts it at between 1000 and 1150. The study finds warm, wet climate during this period, followed by four centuries of very wide fluctuations.[794]

A soil stratigraphy based research carried out in the Mezőföld area (eastern third of Transdanubia) has found that the climate was permanently dry from the 4th to the 14th

[790] Sümegi 2009, 285.
[791] Sümegi 2009, 284–85.
[792] Grynaeus 1997.
[793] Grynaeus 1997.
[794] Siklósy et al. 2009, 258.

centuries. The level of Lake Balaton, as during the Roman Era and the Early Middle Ages, was low to average in the 11th-13th centuries, the latest archaeological research putting it at 105 metres above sea level (present level 104.5 m), which partly agrees with the level found in an earlier reconstruction (see figure 5).[795] By contrast, a new study based on an investigation of settlement structure in Nagyberek (swampy area, which surrounds the southwestern part of Balaton) puts the level of Lake Balaton in the 11th century at 103 metres above sea level.[796] A reconstruction of the settlement pattern on the southern shore of Lake Balaton finds that the level of water in the lake began to rise in the 12th century, and villages were gradually relocated to higher, dry land to the south. During the 13th century, the rising water of Lake Balaton almost certainly inundated some formerly marshy areas of Nagyberek.

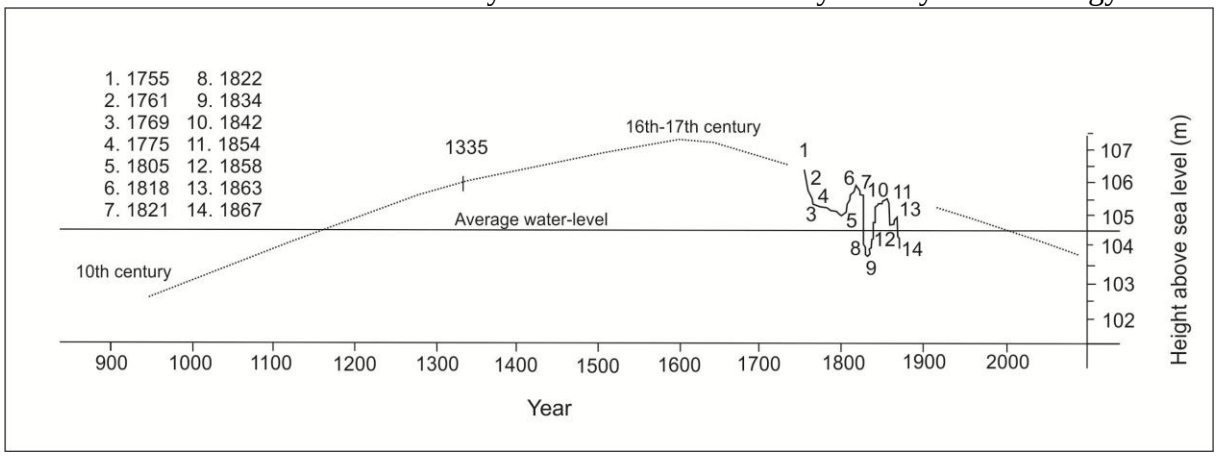

Figure 5. Lake Balaton water level fluctuations over the past millennium (after Sági and Füzes 1973. and Kiss 2009.)

There are sporadic historical sources on the medieval weather of the Carpathian Basin that date from as early as the 11th century. These sources usually concern single events of extreme weather, or rare atmospheric phenomena, and survive mostly in chronicles and annals. As several studies have pointed out, there are no more than a few dozen climate-history sources for the first two centuries of the Árpád Era. There are very few weather events in the 11th and 12th centuries for which there is more than one source. One of these is the weather at the time of the Battle of Ménfő (northwestern part of Transdanubia, near Győr). There are accounts of the battle in two independent sources, the Altaich Annals and the *Histories* of the Burgundian Benedictine monk Rodulfus Glaber.[797] The entry for 1044 of the Altaich Annals explains the victory of Henry III and Peter Orseolo over Aba Samuel as a sudden sandstorm. A partly similar entry is found in the account by Rodulfus Glaber, who explained the defeat of the much larger Hungarian armies by a sudden darkness which fell on them.[798] These two texts, written in places far removed from each other, are almost certainly mutually independent, quite exceptionally for 11th and 12th century climate history sources on the Carpathian Basin. Research during recent decades has produced some data on this period which can be fitted into the framework of European climatic reconstruction. One of these is related to the winter of 1074, when King Solomon led his army to the Battle of Kemej across the frozen River Tisza. Since we know the exact date of the battle (26 February), the river crossing may be placed in the days beforehand. Contemporary sources record that the winter of that year was also very cold in the areas of Lower Saxony, Westphalia, Franconia

[795] Sági and Füzes Miklós 1973, 247–261.
[796] Mészáros and Serlegi 2011.
[797] Vadas 2010, 21.
[798] „Ette ecce turbo vehemens, ex parte nostratium ortus, pulverem nimium adversariorum ingessit obtutibus" – *Annales Altahenses* 41., „[I]nitoque certamine, tanta caligo ac tenebrę occupauerunt Vngrorum partem ut uix iuxta se positum quis illorum posset agnoscere" – *Rodulfi Glabri historiarum* 248.

and Hesse.[799] According to Byzantine sources, the winter of 1125-1126 was very cold in the south of Hungary.[800] The winter was similarly hard in Bohemia and Moravia that year.[801] There are very few known weather events in the 13th century, particularly because the sources for this period have not been subjected to a thorough review of the kind carried out for the early centuries of the Árpád Era by Andrea Kiss. There is one brief period during this century, however, for which we do have substantial information. Several studies have dealt with the weather events and their consequences during the Mongol invasion.[802] There is a relative wealth of sources for this period in general, particularly narrative sources. Rogerius, Thomas of Spalato and charters have all provided useful contributions regarding the weather in the Carpathian Basin during the Mongol invasion. The most important and most severe consequences of the weather and related events of the period must have been the winter freezing of the Danube, which was not unknown in 13th century Hungary, but is nonetheless a clear indication of colder-than-average winter weather. In the case of the freezing over of the Danube in 1241-1242, it is possible to date the beginning of the ice cover with some accuracy, although there is some contradiction between foreign and domestic sources. From two royal charters, the date of crossing may be put somewhere between mid-January and 2 February. The freezing of the Danube certainly exacerbated the destructive effects of the Mongol invasion, especially in Transdanubia, which might have been partly spared if the ice cover had been thinner and unsuitable for crossing, or if the winter had been mild, without durable frost.

Weather and climate of the Little Ice Age in the Late Middle Ages

The turn of the 13th and 14th centuries is one of the most important climatic epoch boundaries in European history, the time when the MCA came to an end and the Little Ice Age (LIA) began. Originally coined by François Matthes, the term is used in two senses by climate researchers, firstly for the age of glacier expansion between the 14th and 19th centuries, and secondly as a metaphor for the climate of the period. Researchers are sharply divided as to the start of the cool/cold climatic epoch. Christian Pfister has claimed the Little Ice Age started in the early 14th century, while Raymond S Bradley (after Hubert H Lamb) has dated it to 1560s.[803]

Although the climate of the Carpathian Basin in the 14th century is shrouded in almost as many uncertainties as the climate during the Árpád Era, scientific and historical research has made some valuable findings on the weather and climate of that time. The above mentioned Nagybárkány study supposes significant cooling from the mid-13th century. It shows that the 13th was the warmest century of the time around it, followed by slow cooling over several centuries in terms of the average temperatures in both the warmest and coldest months, which fits well with Western European climate reconstructions. In the late 14th century, apart from one short warmer period, a sustained period of cooling set in and lasted up to the second half of the 19th century, when the temperature started to rise steeply.[804] In parallel with the fall in temperature, precipitation started to increase, and from the 14th century onwards, the annual precipitation exceeded the average of the preceding millennium. An environmental history study in another sample area – Lake Baláta in South Transdanubia

[799] Kiss 2000, 257. For Western-European parallels: Alexandre 1987, 340.
[800] Kiss 2000, 259.
[801] Brázdil and Kotyza 1995, 226.
[802] Kiss 2000b, 149–156.

[803] Bradley and Jones 1992, 1–4., Pfister 1984, 1992.
[804] Sümegi et al. 2009, 286.

– dates the start of the wet weather earlier: the area was already cold and wet in the late 13th century.[805] A comprehensive environmental history study has also found the spread of cold-tolerant species in North Hungary, in the area of the Bátorliget marsh in the late 13th century. One of the species found to have advanced at this time is *Gyraulus riparius*, a characteristic indicator of weather suddenly turning cold.[806] Research using a similar method in the Jászság area (between the Danube and the Tisza) has confirmed the hypothesis of a colder late Árpád Era environment.[807]

In the early Árpád Era, settlements on the south and west shores of Lake Balaton mainly grew up beside the main water courses of the region. Many of these were on the edge of Nagyberek, but in the 13th century, the Balaton water level started to rise, ultimately by several metres, and almost certainly inundated the whole of the Nagyberek area. The level probably peaked in the 16th and 17th centuries, during which it constituted one of the main guiding factors in the formation of settlements there. Many medieval settlements were not rebuilt, and new dwellings were often built in the vicinity of old villages, on more protected, higher land.[808] There were similar tendencies along some rivers, such as near Szer (Ópusztaszer, southern area of the Great Hungarian Plain) in the Tisza valley, where the settlement clearly expanded towards higher-lying land, and in the area of what was the county of Békés, where lower-lying land along many minor mortlakes became depopulated after the Árpád Era.[809]

There is also archaeological evidence that the precipitation balance in the Carpathian Basin had a greater surplus in the Late Middle Ages than in recent times. In the 14th century, the floor of the Récéskút Basilica (Zalavár, near Lake Balaton) had to be raised because of the rising level of the lake and the groundwater.[810] Historical topographical research had found that boundary determinations and revisions in the Great Plain in the 13th-15th centuries often faced the problem of boundary markers being inaccessible because of the water. Another indicator of wetter climate from the 13th century is the spread of water mills on streams whose water was insufficient to drive mills in the 20th century. Archaeological findings for the late medieval period suggest a rise in the level of the Danube, for example in the Danube Bend area.[811]

The average summer temperatures from the above mentioned climate reconstruction based on the Swiss pines of the Kelemen (Călimani) Mountains in Eastern Transylvania show a brief cold period around 1300. After a short-term warming, cold summer temperatures dominated continuously between 1370 and 1630.[812] There are two extreme summer cold anomalies that merit particular attention: the negative extreme of 1455 and the series of cold summers between 1602 and 1606. The years 1490 to 1545 also diverge from the Central European trend, the reconstruction showing the summer weather to have been temporarily warmer.[813]

According to the Bihar (Bihor) oxygen isotope ice core study, the winter temperatures over some three and a half centuries from the mid-13th century steadily decreased, by about 1.2°C. The low point of the cooling was in the 17th century, which was the coldest century by

[805] Zatykó, Juhász and Sümegi 2007, 251–253. and Zatykó 2008, 126.
[806] Sümegi and Gulyás 2004, 193 and 277.
[807] Sümegi 2005, 112–114.
[808] Hosszú 2010, 36–37.
[809] Vályi 1986, 119–124. For examples from Békés county, see: Jankovich 1998, 673–677. (12/8, 12/9) and Makkay 1989, 367. (7/99)
[810] Pálóczi Horváth 1996.
[811] Laszlovszky 2004, 61–71. and Mészáros and Serlegi 2011.
[812] Popa and Kern 2009.
[813] Kern 2010, 97–98. For Central-European trends, see: Dobrovolný et al. 2010, 93.

winter temperature of the whole past millennium.[814] Summarising the results of the Swiss Pine-based dendroclimatological studies and the oxygen isotope ice core analyses, the dominant period of the LIA in Hungary lasted from about 1370 to the mid-17th century, whereas the MCA probably came to an end some time in the mid-13th century.[815]

The amount of historical data on weather events increases from the 14th century, in parallel with the rapid advance of literacy. The meagreness of chronicle literature means that charters constitute most of the sources for climate history. The charters of the Angevin Era suggest periods in which extreme weather events gave rise to crises, periods of flood and famine in the Carpathian Basin. The Hungarian Angevin Era is of particular importance in European climate history. Many researchers have called this period the start of the transition into the LIA, and there is a unanimous view that the first decades of the 14th century formed one of the most extreme periods. Although the latest research does not bear out the sustained cold period with certainty, the high number of weather extremes, especially the series of hard, cold winters and cool summers make the 1310-1330 period one of the most notable climatic features of the 14th century. Research on the Carpathian Basin in this period has also focused on extreme periods. Although the number of sources on weather become gradually more numerous during the Angevin Era, they still do not permit as detailed an account of each period as in some Western European areas. Nonetheless, a systematic investigation of Angevin-era charters has discovered some short crisis periods.[816] One of these is definitely the 1310s. Several studies have investigated the appearance in the Carpathian Basin of the period of famine and floods which is well documented in Western Europe. Earlier research into contemporary Hungarian sources did not find records of the environmental crisis in the Carpathian Basin, but recently-published results permit the conclusion that extreme weather did affect this area, if not to the same extent as in Western Europe, and – given the political turmoil of the time – must have given rise to serious crises in some areas.[817] Although not yet studied in similar detail, the sources for the 1340s seem to have more potential, and there were undoubtedly many extremes of weather (mainly floods) then, as in Western Europe, even in areas outside the Carpathians.[818] Many charters mention floods on several rivers in spring and summer 1342, followed in September by snow and more floods. Although there are fewer sources on the weather on subsequent years, Andrea Kiss has found data on floods in the country in 1343, and then in nearly every year in the second half of the decade.[819] Although weather in the Carpathian Basin often differs greatly from that in Western Europe, there are some periods for which there are very close parallels in the Kingdom of Hungary and Central European areas. The 1310s and 1340s are undoubtedly among these. There are also several sources for particular years which indicate close weather relationships between the Carpathian Basin and certain areas of Central Europe. For example, it has been established almost without doubt that in many areas of Western and Central Europe, 1363-1364 was one of the coldest winters of the last thousand years, and there is one charter which records the same phenomenon in Hungary.[820] From the 14th century, there are many more charters, and from the 15th century there are contributions from other types of source usable in climate history research: narrative sources, economic documents (mainly customs registers), personal correspondances.

[814] Kern 2010, 84.
[815] Kern 2010, 101.
[816] Kiss 1996, 61–69 and Kiss 1999, 51–64.
[817] Vadas 2009, 67–76 and Vadas 2010b.
[818] Kiss 1996, 65–66.
[819] Kiss 2009b.
[820] Kiss 1999, 57 and 60. On the European weather of this decade: Pfister et al. 1996, 101. and Pfister et al. 1997.

Medieval climatic periods in the Carpathian Basin

The main purpose of this review of climate history has been to determine the character and duration of climatic changes during the Middle Ages. A combination of scientific, archaeological and historical research results have outlined the characteristics of two climate history periods:

1. The start of the Medieval Climate Anomaly in the Carpathian Basin should be sought between the late 7th and early 9th centuries, but it would be premature to take up a definite position in this question on the strength of the data available. Environmental reconstructions based on scientific sources find a warmer period starting in the 7th century and ending at the turn of the 13th and 14th centuries. The reconstruction based on ice cores from Eskimo Ice Cave in Bihar (Bihor) county also identifies the start of cooling in the 13th century, but the character of the climate only changed perceptibly in the early 14th century. Dendroclimatological studies in the East Carpathians date the start of cooling to the mid-13th century, but the climate became markedly colder only in the 1390s. The precipitation conditions characteristic of the MCA may be classed in the "dry-on-average" category, but it is certain that precipitation in the Carpathian Basin increased (or conditions were wetter owing to the lower temperature) in the 13th century, and setting off the several-century rise in the Lake Balaton water level, which peaked in the 17th century.
2. The start of the Little Ice Age may be dated to between the mid-13th and early 14th centuries. The scientific, archaeological and historical data all point to a continuity in cold, wet climate up to the second half of the 19th century. The predominant period of cooling and increasing precipitation was undoubtedly the "long 17th century". In this period, from the final decades of the 16th century up to the start of the 18th century, the Carpathian Basin had a colder climate, with higher precipitation, than at any other time in the last two thousand years.

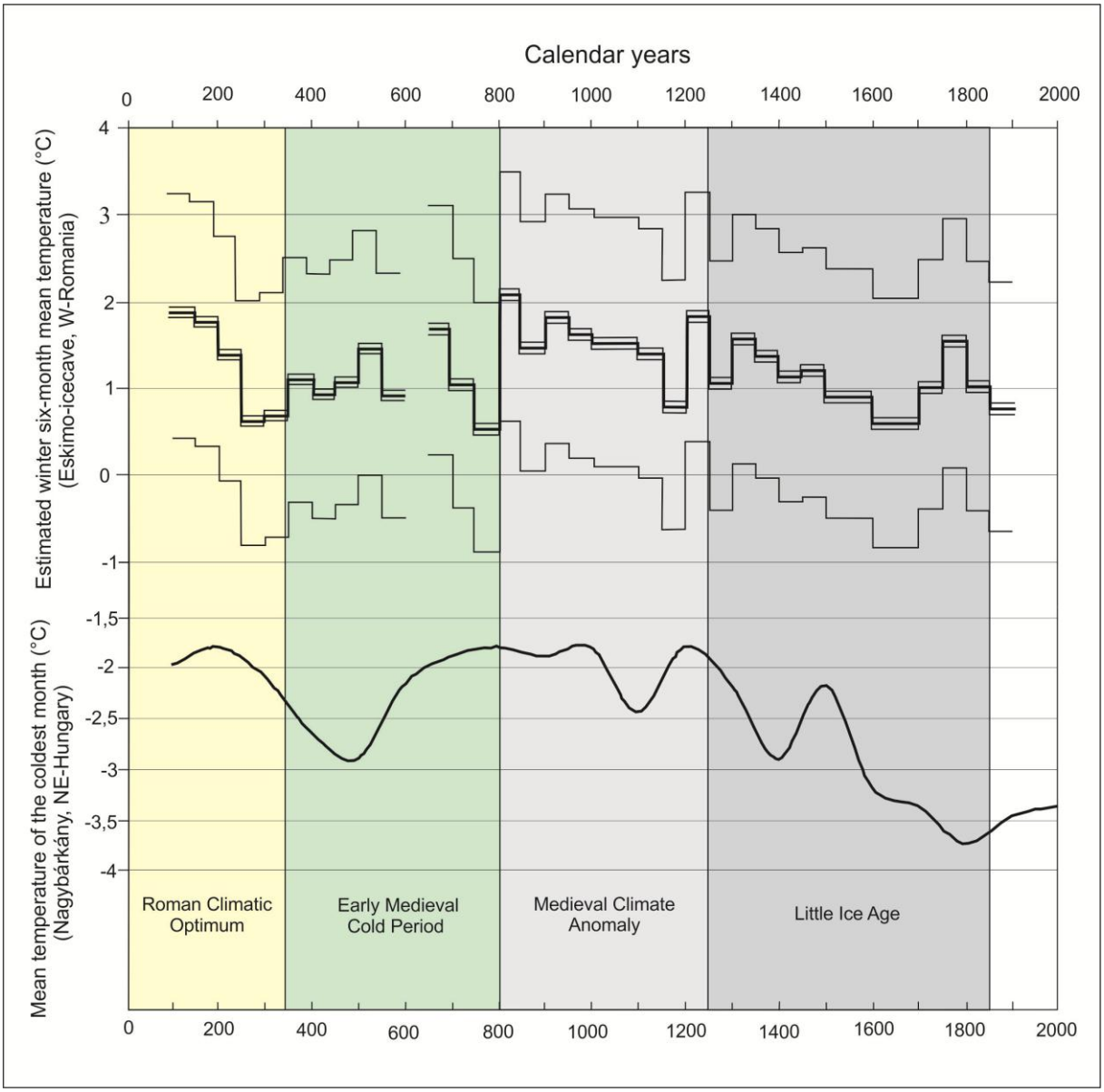

Figure 6: Climate reconstructions for winters in the Carpathian Basin (after Zoltán Kern and Pál Sümegi et al)

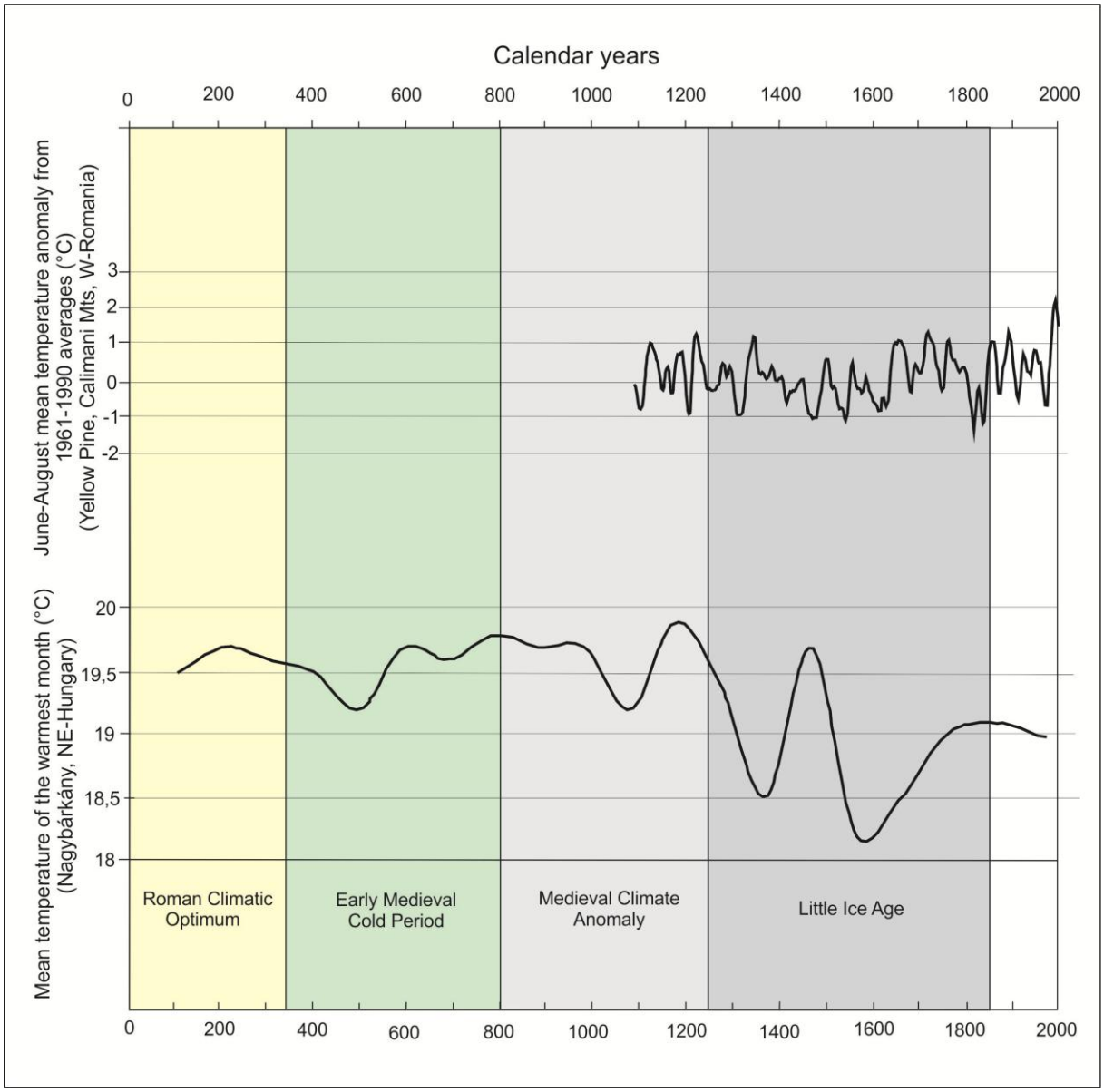

Figure 7: Climate reconstructions for summers in the Carpathian Basin (after Ionel Popa and Zoltán Kern and Pál Sümegi et al)

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Boglárka Weisz

Domestic trade in the Arpadian Age

The main venue for buying and selling in the Middle Ages was the market, although "shops" did start to appear, at least in larger towns, by the early 13th century. Markets continued to grow in number and significance in the 13th century as both production and population increased, i.e. driven by the interrelated growth of supply and demand.

Types of market

Markets came into existence by one of two routes: natural evolution and foundation by order. For the former, the grant of market privileges was merely the reinforcement of an existing activity. One category of these were markets which emerged in ecclesiastical and secular centres of administration, such as Kéménd (now Máriakéménd, Hungary) in Baranya County, the centre of the Baranya estate of the Óvári family, part of the Győr clan, and Pécs (now Pécs, Hungary), an ecclesiastical centre having only an indirect connection with the great trade routes. The market at the county center of Bodrog (now Bački Monoštor, Serbia) is mentioned in sources as early as the 11th century, and the market-town of Nógrád (now Nógrád, Hungary) may also have been helped in the development of its market by virtue of being a county center. The connection between administrative centres and markets has prompted the proposition that every county center held a weekly market in the 11th and 12th centuries[821]. The converse was also true, places where fairs were held later became secular centres: it may be shown that the day of session of county law courts (*sedes judiciaria*, or just *sedria*)[822] was also the day of the weekly market of the town which held jurisdiction.[823]

The remainder of the fairs developed under the influence of economic and geographical factors – transport intersections, river crossings, or boundaries between areas of countryside supporting different kinds of produce. These included Szombathely (now Sîmbăteni, Romania) in Arad County, beside the River Maros, the main water transport route for salt; Eszék (now Osijek, Croatia) in Baranya County, the most important crossing-point of the Dráva, on one of the busiest military routes, also used as a pilgrims' route to Jerusalem; and Pásztó (now Pásztó, Hungary) in Heves County, which lay where the hills rise out of the plain. There are many more examples.

These two factors often acted together in the development of a market, as in the cases of two early episcopal cities founded by the Árpáds.[824] Esztergom will be discussed below, and Fehérvár, a royal centre with prominent ecclesiastical institutions, was also located favourably for the development of its market: it lay on a road intersection where the Bakony Hills meet the Mezőföld plain. These were joined in the mid-13th century by the third royal town, Buda, whose market attained predominance almost at the same time. Its location beside the Danube and at a position in the road network were fundamental to the rise of both the town and its market .

The granting of market charters in the Árpád Era was a royal prerogative, and even an established market could not have operated much longer without it. Even markets set up under

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821 *Fügedi Erik*: Középkori magyar városprivilégiumok. Tanulmányok Budapest Múltjából XIV. Bp. 1961. 32.

822 Engel, P.: The Realm of St Stephen. A History of Medieval Hungary, 895–1526. London–New York 2001. 180.

823 *Csukovits Enikő*: Sedriahelyek – megyeszékhelyek a középkorban. Történelmi Szemle 39. (1997) 377–378.

824 Engel, P.: The Realm of St Stephen i. m. 255–257.

a king's charter were only assured long lives if the above factors were in place. Conversely, markets founded on the strength of a royal charter could only look forward to a long life if the conditions mentioned above were in place.

"Markets" in the Árpád Era mostly comprised weekly markets and annual fairs. Weekly markets were known by the terms *forum ebdomadale, forum sollempne,*[825] *forum generale,*[826] *forum commune*[827], *forum comprovinciale* or *forum provinciale;*[828] annual fairs, linked to church holidays and usually lasting two weeks, were referred to as *forum annuum, forum annuale, nundinae, congregatio* or *feria*.[829]

There was also a third category, the *forum cottidianum*, interpreted by historians as a "daily market". The places where it was permitted to trade every day, however, were usually wholesale operations rather than retail markets. The privilege granted by Béla IV (1235-1270) in 1244 to the Pest *hospes* specified that ships and ferries plying up and down the river had to stop and bring in their goods and carts and hold a market; as before, a market had to be held every day .[830] When a large section of the inhabitants of Pest moved to the Castle Hill of Buda at the news of another Mongol invasion and took their privileges with them,[831] the town of Buda started to exercise this staple right. Weekly markets were also established in Buda – on Saturday and Tuesday in 1320,[832] and on Wednesday, Friday and Saturday in the late Middle Ages.[833] The town retained its staple right throughout the medieval period. It was a way of tying wholesale trade to Buda, and in return the town had to enable incoming merchants to offer their goods for sale whenever they arrived; this was made plain in the 1244 charter stipulating the holding of a market every day. In 1271, Stephen V's market charter to the *hospes* of Győr concerned not a market on a specified day but a *forum liberum*, to be held every day both within and without the castle, even where the *comes* of Győr and his officers had no jurisdiction. Market held on Saturdays in the village of Győr (now Győr, Hungary) continued to be the privilege of the *comes* of Győr.[834] The need for the *forum liberum*, which could be held on any day, arose because in the same charter Stephen V (1270-1272) ordered merchants going to or from Austria to lay out their goods and offer them for sale[835] They could only be expected to do if the means of selling their goods was available to them whatever time of whatever day they passed through. A weekly market on a fixed day (Friday)

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825 1242: Item statuimus, quod in eadem civitate forum sollempne duobus diebus in ebdomada, videlicet die Lune et die Jovis celebretur et preterea forum cottidianum cottidie habeatur — Monumenta historica liberae regiae civitatis Zagrabiae metropolis regni Dalmatiae, Croatiae et Slavoniae I. Collegit Joannes Bapt. Tkalčić. Zagrabiae 1889. (a továbbiakban: Mon. Zagr. I.) 17.

826 Pl. 1307: forum generale, quod feria tercia celebratur — Regesta diplomatica nec non epistolaria Slovaciae. I–II. Ad edendum praeparavit Vincent Sedlák. Bratislavae 1980–1987. I. 240. (Anjou-kori oklevéltár I–XXXI. Szerk. Almási Tibor, Blazovich László, Géczi Lajos, Kristó Gyula, Piti Ferenc, Sebők Ferenc, Tóth Ildikó. Bp.–Szeged 1990–2009. (a továbbiakban: Anjou-oklt.) II. 277. sz.).

827 Pl. 1427: in foro conmuni eodem die [feria quarta—W.B.] in possessione Thapolcha vocata celebrato – – A pannonhalmi Szent-Bendek-rend története I–XII/B. Szerk.: Erdélyi László, Sörös Pongrác. Budapest 1902–1916. (a továbbiakban: PRT) VIII. 464.

828 Pl. 1330: villa ecclesie praefate Errad vocata feria tertia singulis ebdomadis imperpetuum forum conmune et provinciale possit celebrari — Magyar Országos Levéltár, Diplomatikai Fényképgyűjtemény (a továbbiakban: DF) 200 402.

829 Vö. Engel, P.: The Realm of St Stephen i. m. 253.

830 Item naves et carine descendentes et ascendentes cum mercibus et curribus apud eos descendant et forum sicut prius habeant cottidianum — Elenchus fontium historiae urbanae III/2. Ed. András Kubinyi, Monika Jánosi, Péter E. Kovács, József Köblös, István Tringli. Bp. 1997. (a továbbiakban: EFHU) 40.

831 *Fügedi E.*: Városprivilégiumok i. m. 80–81.; *Szűcs Jenő*: Az utolsó Árpádok. Budapest 1993. 55.

832 Magyar Országos Levéltár, Diplomatikai Levéltár 40 389. (Anjou-oklt. V. 852. sz.)

833 *Karl Mollay*: Das Ofner Stadtrecht. Eine deutschsprachige Rechtssammlung des 15. Jahrhunderts aus Ungarn. Monumenta Historica Budapestinensia 1. Bp. 1959. 137.

834 concessimus eisdem liberum forum tam in castro, quam exterius quotidiem celebrandum — EFHU 62.

835 EFHU 63.

also later developed in Győr.[836] Louis I (1342–1382) similarly granted a daily market privilege to Kassa (now Košice, Slovakia) in 1347 upon granting the staple right to the town.[837] Weekly markets were held in Košice on Thursday and Friday.[838] As in Győr and Buda, there is a clear link between daily markets and the staple right, i.e. wholesale trading. It is almost certain that this, which mostly involved large amounts, took place in market halls or similar suitable premises rather than market places,[839] and it is conceivable that in the initial period, before these buildings were erected, the exchange of goods took place on market places or even the merchants' lodgings. The town of Košice also arises in connection with the issue of depots: in 1482, the town protested that despite its privileges, nobles living around and in the county of Kassa (*in illa provincia*) were setting up places for storing goods in their estates and villages, where they piled up foreign wines and sold them.[840] This information may be sufficient grounds to deduce that when Béla IV, in 1239, granted the archepiscopal city of Esztergom a weekly market from Friday midday to Saturday evening *cum foro quotidiano*,[841] the town's staple right – although held only by tradition – and the related trading may have been behind it. The situation may have been similar in Zágráb (now Zagreb, Croatia) where in 1242 Béla IV granted a daily market to the Zagreb *hospes* in addition to their weekly markets on Monday and Thursday.[842] Although there is no mention of a staple right in this charter, it does remark on daily markets connected to foreign trade.

The day of the market

In the early 11th century, markets were held on Sundays, in front of the church. This was acceptable to the ecclesiastical authority because people coming to the market also came into the church. The charter of Pécsvárad Abbey, where it mentions a market held on Sundays beside the church of St Peter, may be referring to this period.[843] A few decades later, however, there was a move to have the market held at times other than Sundays and feast days, i.e. to separate churchgoing from trading. The latter was turning out to have a greater attraction, and discouraged people from going to church. The Illuminated Chronicle states that markets were moved to Saturday by Béla I (1060-1063),[844] although historians now consider regard that Géza I (1074–1077) was responsible for this.[845] Records from Esztergom and Szigetfő

836 1361: PRT II. 474.

837 Item currus descendentes et ascendentes cum mercimoniis apud eos descendant et forum, sicut prius, habeant cotidianum — Výsady miest a mestečiek na Slovensku I. 1238–1350. Ed. Ľubomir Juck. Bratislava 1984. 148.

838 1327: DL 16 095.; 1342: DL 103 170.

839 *Szende Katalin*: Városi gazdálkodás a középkori Magyarországon. In: Gazdaság és gazdálkodás a középkori Magyarországon Gazdaságtörténet, anyagi kultúra, régészet. Szerk.: Kubinyi András, Laszlovszky József, Szabó Péter. Bp. 2008. 432.

840 in villis et possessionibus ipsorum quedam loca depositionis instituissent et ad huiusmodi loca vina externa congererent et exinde…venditioni exponerent — DF 271 438.

841 EFHU 33.

842 Item statuimus, quod in eadem ciuitate forum solempne duobus diebus in ebdomada videlicet die Lune et die Iouis celebretur, et preterea forum cottidianum cottidie habeatur — Mon. Zagr. I. 17.

843 +1015: Diplomata Hungariae antiquissima accedunt epistolae et acta ad historiam Hungariae pertinentia I. (ab anno 1000 usque ad annum 1131). Edendo operi praefuit Georgius Györffy, adiuverunt Johannes Bapt. Borsa, Franciscus L. Hervay, Bernardus L. Kumorovitz et Julius Moravcsik. Budapestini 1992. (a továbbiakban: DHA I.) 72–80. (Az Árpád-házi királyok okleveleinek kritikai jegyzéke I–II. Szerk. Szentpétery Imre, Borsa Iván. Bp. 1923–1987. (a továbbiakban: RA) 6. sz.).

844 Scriptores rerum Hungaricarum tempore ducum regumque stirpis Arpadianae gestarum I. Edendo operi praefuit Emericus Szentpétery. Budapestini 1937. 358.

845 *Györffy György*: István király és műve. Bp. 1983.[2] 335.; *Jánosi Monika*: Törvényalkotás Magyarországon a korai Árpád-korban. (Szegedi Középkortörténeti Könyvtár 9.) Szeged 1996. 102.

provide evidence of markets being held on Saturdays even during the reign of Stephen I.[846] Shifting the time of the market did not always pass off easily. Ladislas I (1077-1095) was forced to take action against Sunday markets. The king made a law ordering the horses of people going to market on Sundays and feast days to be confiscated, and traders' tents to be struck.[847] Other days of the week were later added to Saturday on the calendar of markets, and in the 12th and 13th centuries, markets could effectively be held on any day from Monday to Friday. Weekly markets also appear in place names: it is a widely-shared view that where a day of the week forms part of a place name (e.g. Keddhely [Tuesday] or Szombathely [Saturday]), it refers to the day when the fair was held.[848] Charters started to grant Sunday markets again in the mid-14th century,[849] Christianity having consolidated its position and there being a Sunday market day at annual fairs in any case.

Markets and customs duties

The collector of customs was responsible for guaranteeing the market as a place where trading could be conducted in peace, and imposition of duty was an assurance to the customer that he was not buying stolen goods. Customs duties, initially due solely to the king, were later divided in the proportion of two parts to the king and one to the *ispán*. The royal customs grant concerned only the king's two-thirds share, although we know of cases when he also granted the ispán's share. By the grant of *forum liberum* in the 13th century, the king renounced both his own and the ispán's share of the customs. This may also have applied to newly-established customs stations, for which the sources make no mention of a ispán's share. The ispán received a smaller share of the customs on goods intended for export (a quarter) than he did on imported goods or goods which were transported and sold in domestic trade.[850]

Customs also embraced stallage and gate tolls. It is also possible to identify a whole category of customs-free markets, although it is also true that markets provided sources of revenue other than customs alone. Among these were the fines from the administration of justice in the market. Money changers were also present, but the king did not relinquish control of the profit from this, conceding at most that his money changers would not be present at a particular market,[851] or would perform their duties only together with the judge and the village elder.[852] Traders used their own weights and measures to dispense their wares, but had to have them calibrated when they came to the market. The municipal laws of Selmecbánya (now Banská Štiavnica, Slovakia) prescribed severe punishments for uncalibrated liquid measures and dry measures, yardsticks, scales and weights.[853] It is possible that the trader had to pay a small sum to the calibrator.

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846 *Györffy Gy*.: István király i. m. 335.

847 Sancti Ladislai regis decretorum liber primus 15–16. cc. (*Závodszky Levente*: A Szent István, Szent László és Kálmán korabeli törvények és zsinati határozatok forrásai. [Függelék: A törvények szövege]. Bp. 1904. 160.).

848 *Major Jenő*: A magyar városok és városhálózat kialakulásának kezdetei. Településtudományi Közlemények 18. (1966) 51–55.; *Szabó G. Ferenc*: A hét napjai a helységnevekben. Névtani Értesítő 16. (1994) 51–55.; *Szabó G. Ferenc*: A vásározás emlékei középkori helységneveinkben. Nyíregyháza 1998.

849 1390: ZsO I. 1434. sz.; Kapi (Sáros m., ma Kapušany, Slovakia) — 1418: Zsigmondkori oklevéltár. I–XI. Szerk.: Mályusz Elemér, Borsa Iván, C. Tóth Norbert, Neumann Tibor. Bp. 1951–2010. VI. 1706. sz.; Egyedfalva (Bács m., ma Mladenovotól délre, Szerbia) — 1462: DL 15 714 .

850 Vö.: 1255: EFHU 51–52. (RA 1237. sz.).

851 +1190: EFHU 14–19. (RA 151. sz.); 1217: Monumenta historica episcopatus Zagrabiensis I. Edidit Joannes Bapt. Tkalčić. Zagrabiae 1873. 44–46.

852 1255: Codex diplomaticus et epistolaris Slovaciae I–II. Ad edendum praeparavit Richard Marsina. Bratislavae 1971–1987. (a továbbiakban: CDES) II. 344–345. (RA 1062. sz.).

853 Wir wellen, das welich mensch, es say weib oder mon, das mit unrechter maas fwndnn wirt, sye sey trewg oder feuchtt, oder mit unrechter Elln, Waag oder gelött, der sol deu gesworenn ein marck gebnn, wirdet er

As with transit customs, the most primitive form of market customs was flat-rate duty. This was collected on each cart and packhorse brought into the market. The system became more sophisticated with the introduction of a customs tariff, which adjusted levels of duty to the type of merchandise, although collection was still based on carts and packhorses or smaller units of carriage (item, bolt, bushel, barrel, bundle). This is the procedure found most often in market customs regulations. The final stage of development was *ad valorem* duty, set in proportion to the value of the merchandise, although the latter was left to the collector of customs to determine.

The sources record many different ways in which customs duty was collected. The Esztergom customs regulations set the duty payable on each item, either by the trader or the customer, while the Buda and Gölnic (now Gelnica, Slovakia) regulations required that both customer and seller pay duties, presumably at the market itself. The Esztergom tariff may have been the earlier procedure, and may have required the seller to pay nothing except stallage to the holder of the market.

Market wares

The endorsement on the deed of foundation of Tihany Abbey, dating from 1055, tells us that Andrew I granted to the Abbey the market customs (*mercati tributum*) of Veszprém (now Veszprém, Hungary) "its part thereof, in cooking vessels, food, pails, and all ironmongery (tools)".[854] The articles of merchandise mentioned there well reflect the primitive barter which went on at markets in the early period, although these items, essential as they were to everyday life, also appear in later sources connected with markets.[855]

The sale of stolen goods is detectable as a problem as early as the 11th century, when internal trade was still in its infancy. Laws passed under the reigns of Ladislas I(years) and Coloman (1095–1116) show this to have concerned mainly the trade of people and livestock. The laws treated servants as chattels; buying and selling them was quite natural.[856] Servants were also among the major articles of merchandise in foreign trade in the 11th century. King Coloman attempted to restrict the export of Hungarian servants so that servants born in Hungary would boost the kingdom's economic strength.[857] Servants were still being bought and sold at markets in the 13th century, as an entry in the Esztergom customs register attests.[858]

Ladislas I and Coloman restricted the export of oxen, important for farming, and horses, essential in warfare and travel.[859] The king retained a monopoly in the export of horses: they could they be taken over the border only with his express permission.[860] Changes in livestock exports, however, may be observed during Coloman's reign. The king retained the

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zu dem anndernn mal begriffnn, so sol er czwu Marck gebnn, wirtt er zu dem drittnn mal daran begriffnn, so ist er bestanndnn mit der hannt, oder er löse sie mit zehnn Marknn, der gefallenn czwei tail dem Richtter und das dritte tail den Gesworenn, also verr mon in begenadnn wil — Árpádkori új okmánytár I–XII. Közzé teszi Wenzel Gusztáv. Pest–Bp. 1860–1874. (a továbbiakban: ÁÚO) III. 209.

854 DHA I. 149–152. (RA 12. sz.).

855 +1209: CDES I. 123–124., RA 246. sz. (Újfalu, Sáros m.); 1288. ápr. 18.: Monumenta ecclesiae Strigoniensis II. Collegit et edidit Ferdinandus Knauz. Strigonii 1882. (a továbbiakban: MES II.) 236–241., RA 3483. sz. (Esztergom, Esztergom m.).

856 Sancti Ladislai regis decretorum liber primus 2., 10. cc. (*Závodszky L.*: Törvények i. m. 158., 159–160.) és Sancti Ladislai regis decretorum liber secundus 11. c. (Decreta regni mediaevalis Hungariae. The Laws of the medieval Kingdom of Hungary I. 1000–1301. Eds.: Bak, M. János–Bónis, György–Sweeney, James Ross. California 1999. 14.); Colomanni regis decretorum liber primus 44. c. (DRMH 29.).

857 Colomanni regis decretorum liber primus 77. c. (DRMH 32.).

858 1288. ápr. 18.: MES II. 236–241. (RA 3483. sz.).

859 Sancti Ladislai regis decretorum liber secundus 15. c. (DRMH 15.).

860 Uo. 16–17. cc. (DRMH 15–16.).

royal monopoly on horse exports, but traders were allowed to take cattle out of the country.[861] Restrictions on trading horses became even tighter, all mention of royal permission for exports disappearing, and even inhabitants of the kingdom were banned from buying them.[862] The last time the horse appears on either domestic or foreign trade is in the 13th century.

Oxen were widely traded in the 13th century, both in exports and domestic markets. The Győr customs rules made a distinction between the oxen driven by Germans and Hungarians: Germans paid five times as much as Hungarians, perhaps because they took their oxen abroad, whereas Hungarians sold theirs within the kingdom.

The animals traded in the Árpád Era, other than horses and oxen, included goats, lambs and pigs. There were also important fish markets in towns and villages beside the rivers (those along Danube tributaries are well documented). The Esztergom customs regulations specifically mentioned sturgeon (*Acipenser sturio* and *Acipenser huso)* among the most valuable Danube fish, as well as the easier-to-catch pike and carp. The customs rate shows that sturgeon (*Acipenser sturio*) was the most expensive fish. There were animal products as well as live animals on sale at markets: meat, fat tallow and hides (goat- sheep- cow- and rabbit-skin). Valuable furs (like squirrel) also appeared on market stalls, probably from the earliest times. Wax, of use in many areas of life, was another animal product often sold in markets.

Among the most sought-after commodities of the age were salt and wine. The only information we have on wine areas comes from the Esztergom customs regulations. These regarded wine from *Marchia* (Syrmia) as being in a category of its own, distinguished from wine of any other origin – primarily that from Somogy, Zala and Sokoró. The same regulations indicate that wine was also an export commodity.

A wide range of textile products were on sale at markets, both the cheaper kinds (grey cloth, German canvas) and the more expensive (scarlet, fustian, silk).[863] Distinctions among some items only appear in customs tariffs in the 13th century, presumably when there was a rise in both supply and demand. As well as the material itself, there were finished products on sale: gloves, clothes and hats.

Foods, like cheese, fruit, honey (essential for sweetening) and pepper (for both medicinal and culinary purposes), all featured in Árpád Era markets. Pepper was just one of the spices which came to Hungary from abroad. Cereals – wheat, rye, barley and oats – were sold for both human and animal consumption.[864] Other crops were also present among market wares, like hops, used in the brewing of beer, and the tanning agent sumac. Hay for animals was also sold at markets, as were building timber and firewood.

Although the customs regulations also covered metals such as lead, copper, iron and silver, duty was charged only on silver (1/240th). It is interesting that gold, one of the main foreign trade commodities, does not appear on any customs regulations, and the other precious-metal ore, silver, appears only on the customs regulations of Buda and – slightly later – Gelnica. It may thus be inferred that precious metal ores were sold not at markets but through some other channel associated with the mines. Precious stones and pearls, however, appeared at markets as the wares of Venetian merchants. There were of course many other wares on sale, everyday items and luxury products.

Royal policy towards markets

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861 Colomanni regis decretorum liber primus 77. c. (DRMH 32.).

862 Uo. 76. c. (DRMH 31–32.).

863 *Pach Zsigmond Pál*: Színesposztó és szürkeposztó a 13. századi Magyarországon. In: *Uő*: Szürkeposztó, szűrposztó, szűr. Fejezetek a Magyarországi szövőipar történetéből. (Társadalom- és művelődéstörténeti tanulmányok 31.) Bp. 2003. 9–17.

864 *Szűcs J.*: A gabona árforradalma i. m.

Laws passed by Ladislas I were the first expression of the king's wish to make markets the sole arena for trading commodities. By doing so, he aimed to provide security for trade and enforce collection of market customs duties. Buying and selling were to be conducted solely at markets, and Ladislas I stipulated that, to protect customers, contracts were to be made in the presence of the judge, the collector of customs, and witnesses.[865] Ladislas' laws also tell us that it had already long been customary to make transactions before witnesses.[866] The presence of witnesses was probably needed because of the prevalence of theft at that time, and also to be able to settle any legal disputes that might arise in connection with the transaction.

Coloman extended Ladislas I's laws to regulate trade between Jews and Christians. Coloman required that transactions be made in the presence of Christian and Jewish witnesses, and that the commodities and the witnesses' names be set down in a document to which both parties put their seals.[867] The law provided for a procedure similar to that of loan transactions, although the requirement for a sealed document for the latter was linked to a specified minimum amount.[868]

Coloman's laws are notable for not stipulating the openness of markets for transactions between Jews and Christians, and for replacing role of the market judge and collector of customs by with Christian and Jewish witnesses and a sealed document. It should be noted, however, that the main purpose of the *cartula sigillata* was to record the names of the witnesses and not to set in writing the transaction itself. The *cartula sigillata* was presumably used until the 13th century,[869] because the Jewish privilege of 1251 only mentions the mortgaged property in loan transactions,[870] even though the sealed document was already used in the mortgaging of estates.[871]

In addition to the laws of Ladislas I and Coloman, there is indirect evidence that markets may have been open to both free and bonded people as early as the 11th century, and certainly were in the 12th.[872]

Royal policy made Esztergom the commercial centre of the country up to the time of the Mongol invasion. Esztergom was a royal seat until the mid-13th century, and remained a county seat and a centre of the Hungarian church throughout the Middle Ages. Its geographical location at the confluence of the Danube and the River Garam also contributed to the city's emergence as a focal point of long-distance trade. Its Castle Hill, rising above the natural crossing point, afforded control of both the waterways (Danube and Garam) and the roads. In the second half of the 13th century, Esztergom lost its dominance, and its market went down with it. The waning of the city’s significance, like its emergence, was due to a combination of circumstances. Firstly, at the turn of the 12th and 13th centuries, church influence halted urban development there. Secondly, after the Mongol invasion, Béla IV moved the royal seat to Buda, which had a staple right, and this speeded the decline of Esztergom's market. Buda became the country's primary crossroads, a function already latent in its geographical location. Árpád Era charters offer no clue as to what day the weekly

865 Sancti Ladislai regis decretorum liber secundus 7. c. (DRMH 14.).

866 Sancti Ladislai regis decretorum liber tertius 11. c. (DRMH 20.).

867 Capitula Colomanni regis de iudeis 4–7. cc. (*Závodszky L.*: Törvények i. m. 195–196.).

868 *Závodszky L.*: Törvények i. m. 195–196.

869 Vö. *Kumorovitz L. Bernát*: Szent László vásártörvénye és Kálmán király pecsétes cartulája. In: Athleta Patriae. Tanulmányok Szent László történetéhez. Szerk. Mezey László. Bp. 1980. 85–87.

870 1251: Magyar–zsidó oklevéltár I. (1092–1539). Szerk. Friss Ármin. Bp. 1903. I. 27–28.

871 Uo. 30.

872 *Kubinyi András*: A korai Árpád-kor gazdasági fejlődésének kérdőjelei. Valóság 1996: 3. 60–61.; *Kubinyi András*: „A magyar várostörténet első fejezete” In: Társadalomtörténeti tanulmányok. (Studia Miskolcinensia 2.) Szerk. Fazekas Csaba. Miskolc 1996. 39–42.

market was held in Buda. In the early 14th century, markets were held on Tuesday and Saturday.[873] The Buda Statute Book mentioned a Saturday market held by custom (*von gewonhait*).[874] Other evidence for the Saturday market is the name of the "Saturday Gate". Erik Fügedi has placed the origin of this Saturday market to the second half of the 12th century.[875] András Kubinyi traced the emergence of the Tuesday market to the period following 1255.[876] Buda acquired the privilege to hold an annual fair on the birthday of the Virgin Mary (8 September) in 1287.[877]

Closely linked with the markets was Béla IV's customs policy, by which he attempted to systematise the customs in 1255. That was when the Buda and Győr customs tariffs were set, and the items on the Esztergom tariff adjusted. Jenő Szűcs has proposed that Béla IV was attempting to draw off some of the profit from foreign trade and at the same time relieve the burden on domestic trade by the grant of customs exceptions,[878] but since the three customs tariffs issued during the reign of Béla IV all concerned customs posts where the right of collection was held by the church, they could not have boosted revenue to the royal treasury. The setting of customs tariffs was also primarily in the interests of the merchants rather than the collectors of customs. It may have been related to the appearance of a problem which was to become serious in the second half of the century: the collection of unjustified customs duty.

873 1320: DL 40 389.

874 *Mollay, K.*: Das Ofner Stadtrecht. i. m. 137.

875 *Fügedi E.*: Városprivilégiumok i. m. 79.

876 *András Kubinyi*: Die Anfänge Ofens. Berlin 1972. 51.

877 Budapest történetének okleveles emlékei I. Csánky Dezső gyűjtését kiegészítette és sajtó alá rendezte Gárdonyi Albert. Bp. 1936. (a továbbiakban: BTOE I.) 228–230. (RA 3449. sz.).

878 *Szűcs J.*: Az utolsó Árpádok i. m. 72.

Boglárka Weisz

Royal revenues in the Arpadian age

Royal revenues in the Arpadian age (1000–1301) were gathered in the form of money, produce or labour. At different times during this period, one form or another tended to dominate, but never to the exclusion of the rest. Food tax was the main source of revenue for the crown in the 11th and 12th centuries, giving way to monetary taxation in the 13th century, although the enormous amount of produce demanded by the royal court stopped the food tax from dying out. Arpadian kings enjoyed income from royal estates and royal prerogative. Both were in use from the beginning, and until the 13th century the kings made no distinction between them and did not link royal expenditure to the origin of the revenue. A register of revenues from the time of Béla III (1172–1196) – the only document of its kind which survives from the Árpád Era – places revenue from these two forms side by side. From the early 13th century on, certain revenues were distinguished, as either due to the royal chamber, or to the king as a landlord. This might have been primarily explained by the practice that the *ispán* (*comes parochianus*), who administered the collection of fiscal revenues within a county, received one-third of such incomes, whereas he had no share from seigneurial dues. Some other revenues changed in the course of the centuries, such as the *marturina*, i.e. "marten's fur", which in many cases became a seigneurial due – because the king assigned it, at least partly, to the landowners –, or the *pondus*, which was re-imposed on the royal estates in the 13th century, and the king could thereafter collect it only as a landowner. Royal revenues of the Arpadian age can be arranged into the categories: 1. revenues from royal monopolies; 2. customs and tolls; 3. direct taxes; 4. other royal revenues; 5. revenues from royal estates.

I. Revenues from royal monopolies

I.1. *Salt monopoly*

Salt mines passed into the hands of the Árpáds early in the period,[879] and kings were determined to safeguard their monopoly. The privileges granted in the second half of the 13th century to the towns which had grown up next to salt mines did not include ownership of the mines. All the towns got was the opportunity to extract salt for a specified period and sell it freely. There were two methods employed to supply the kingdom with royal salt during the Árpád Era: setting up royal salt depots, and apportioning salt to ecclesiastical bodies which uplifted it at the mines or the depots and then distributed it.[880] Under the Golden Bull of 1222, royal salt depots could be established only in Szeged, Szalacs and the border marches.[881] Charters attest to royal salt depots in Szalacs, Szeged, Pozsony (now Bratislava, Slovakia), Sopron, and Vasvár. The location of the depots show that the king was above all intent on controlling foreign trade.

I.2. *Mining of precious metal ore*

Until the Mongol Invasion of 1241/1242, the mines were owned by the king, who enjoyed all of their income. A landowner who was granted title to an estate containing a mine was due one third of the ore from the mine. The settlement of miners from Bohemian and German lands in the period following the Mongol attack prompted a change in the revenue from mines. The miners were granted mining freedom, the right to work independently, with obligations only to give the king a certain part of the extracted metal, the *urbura*, representing

[879] SRH II. 489–490.
[880] Kubinyi 1988, 217.
[881] CDES I. 199–201.

an eighth of the yield in silver and a tenth of that in gold. Mine-owners included ecclesiastical and temporal landowners. There were three arrangements under which mines on private land could be worked: 1. the king acquired the land enclosing the mine from the landowner in exchange for other land, so that the mine became royal property; 2. the landowners worked the mines themselves, paying *urbura* to the king; 3. the landowner was relieved of possession of the land while the mine was worked, and compensated with one third of the *urbura*.[882]

I.3. *Coinage privileges*

The minting of money was a royal privilege in the Arpadian age, held solely by the king and the princes. The issuers of coins had to cover the costs of refining silver and minting the coins, for which there were several methods: 1. if precious metal from commoners was minted, a certain percentage of the coins' value was deducted as expenses (This procedure might have been in practice in Hungary, however, there is only one source referring to that. According to a mid-11th century decree by the Mainz scholar Jehuda ben Meir ha-Kohen, a Hungarian Jew requested and received permission from the queen to get his own silver minted into coins.[883]) 2. if the king had the coins minted from his own ore, the profit was made by raising the number of coins per unit weight, circulation being counted by the smaller number. For example, 300 or 360 denars were minted from one pound of ore, but one pound was still calculated as 240 denars. 3. There was regular renewal of money (*renovatio monete*), whereby chamber money changers (called *nummularius* or *monetarius)* exchanged newly-minted coins for old or foreign coins, deducting the "chamber's profit" (*lucrum camarae*). The money had to be changed within a fixed period, usually the six weeks from Palm Sunday to St George's Day.[884]

The way money renewal was carried out went through some changes in the course of the Árpád Era. In the early period, it was done at fairs, however, royal money changers could not operate on certain ecclesiastical lands: for example, the inhabitants of the ecclesiastical estate of the bishopric of Pécs acquired the royal coins (*regni monetam*) by selling their wares at other county fairs (*in aliis provincialibus foris*).[885] As foreign coins and unminted silver were also in circulation during the Árpád Era, the king could only secure his revenue through a form of money changing that required everybody in the kingdom to change a specified sum. Under the laws of Andrew III (1290–1301), the king issued the coins via four good men (*quator boni homines*) from each county and the *ispán* of the county (*comes parochianus*),[886] who – by ancient custom (*secundum antiquam consuetudinem*) – discharged this duty at fairs and other places.[887] The procedure for changing money is also recorded in a royal instruction to the county of Ung in 1330, and probably reflects how it was done in the late 13th century. Before the annual money changing, a body of persons elected by the county assembly assessed how much the county could pay, and this determined the amounts people had to change. Subsequently, money was changed at a specific place and time: every tenant peasant (*iobagio*) bound to pay landlord's tribute of more than one mark had to pay half a *ferto*. The chamber count gave half a *ferto* of new denars in exchange for half a *ferto* of silver, weighed on the scales, but the same amount of new denars for old coins weighing 9 pondus of (half a

[882] Weisz 2007.
[883] Spitzler and Komoróczy 2003, 109–110.
[884] Hóman 1916, 415.
[885] +1190-00-00: EFHU 17. (RA no. 151).
[886] DRMH 43.
[887] DRMH 50.

ferto being 6 *pondus*).[888] There is evidence from the late 13th century, that the nobles were responsible for payment of the chamber's profit (*iuxta regni consuetudinem ab antiquo approbatam*), and had to ensure payment within a certain time limit after it was levied.[889] Anybody who did not accept the coins had to pay a *collecta* of half a *ferto* for every tenement (*per singulas mansiones*).[890] This *collecta monetae, collecta lucri camerae* – levied to redeem unchanged money or as chamber's profit – appeared in the early 13th century.

II. Customs and excise (*tributum, teloneum*)

Collection of customs duty and royal customs policy

When St Stephen (1000–1038) laid down the first royal policy of customs and excise policy in Hungary, he was formalising an already well-established practice of collecting revenue in this form.[891] King Coloman (1095–1116) legislated that everyone selling their own wares or produce at a market was obliged to pay duty in accordance with the law of St Stephen.[892] Otto of Freising's history of Emperor Frederick I, who travelled to Hungary, tells us that collection of duties in the kingdom was the sole privilege of the king in the early 12th century.[893] The right to exact customs and excise duties was granted to others on a substantial scale from the time of Andrew II (1205–1235). The various customs and excise duties were reviewed in the second half of the 13th century[894] and commodities liable to them were specified in writing. The king eventually relinquished his sole control of customs and excise, retaining two parts and granting the third part to the *ispán*. This applied to customs duty on imports and duties payable on goods transported and sold inland. The ispán received a smaller proportion – one quarter – of the customs duty on exports.[895]

Forms of duty

II.1. Inland duties

II.1.1. *Passage*

Road tolls (*tributum viae*) were paid by those travelling by land – on foot, horse or cart. To cross rivers or lakes they had to pay bridge tolls (*tributum pontis*) and ferry tolls (*tributum portus*). Those travelling up and down rivers paid shipping tolls (*tributum navigii*), or anchorage (*tributum in portu*) probably collected at harbours beside bridges and ferries, where bridge and ferry tolls were also collected from persons crossing the water. The ferrymen charged their passengers ferriage (*naulum*), out of which they paid a toll (*tributum nauli*) to the lord holding the right to the shipping toll. Since goods transported by land often had to cross rivers, this was a device by which lords could impose their right to exact the shipping toll on such goods. Tolls were also collected on timber floated down the river (*tributum lignorum*). This category of duties also included salt toll (*tributum salinarum*), which the sources mention as being payable by salt carriers, whether they transported the salt by land or water.

II.1.2. *Market tolls*

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[888] Cf. Hóman 1921, 258–259. Engel 1999, 37–38.
[889] DRMH 72.
[890] DRMH 50.
[891] Cf. Györffy 1983, 52–53 and 108–110.
[892] DRMH 27.
[893] Otto of Freising, *Gesta Frederici imperatoris*, in Waitz, 1912.
[894] DRMH 44.
[895] 1255-00-00: EFHU 51–52. (RA no. 1237)

The other main category of inland duties was that of market tolls (*tributum fori*), payable by both buyers and sellers at markets. Sale from workshops was also taxed, and stallholders had to pay stallage. Excise payable on wine and other beverages sold in taverns should also be regarded as market duty. Closely connected was gate toll (*tributum portae*). It is possible that gate tolls were initially confined to certain items, like carts laden with timber, and extended only later, when it was realised that market tolls, too, could be collected more simply and effectively if payment was demanded at the castle gate.

II.2. Customs duties

II.2.1. *Customs duty collected at border gates*

Travellers going into or out of the country had to pay customs duties at border gates. These duties are mainly mentioned in privileges granting exemption,[896] and so we know of only two specific border gates and the duties they collected. In 1274 Ladislas IV (1272–1290) granted a customs gate at Szamobor in Zagreb County (Samobor, Croatia) to Ivan, comes of Oklics (Okič). The grant included the duties to be collected there and the adjacent village (*cum tributo porte prope ipsam villam in regni nostri confinio existentis*).[897] At Sztragár in Szepes County (Ždiar, Slovakia), customs duties were collected at the gate (*in porta*) on the road to Poland. In 1298, Bald, ispán of Szepes, exempted the inhabitants of the nearby village of Őr, within the domain of Szepes Castle (now the area of Spišská Belá, Slovakia) from duties to defend the customs gate.[898] There is also sufficient surviving information to tell us what these customs duties were worth. In 1217, Andrew II granted Venetian merchants entering the kingdom the right to pay one eightieth in general, and nothing at all on gold, pearls, precious stones, spices and silk fabric.[899] In 1336, Charles I (1301–1342) prescribed the routes that merchants from Hungary, Bohemia and other neighbouring lands had to take through the country, and required them, upon entering the Kingdom of Hungary at Fehéregyháza (referred to as Újvár, and now Holíč, Slovakia), to pay "eightieth" duty on their wares (*octuagesima de rebus mercimonialibus*).[900] Payment of the eightieth upon crossing the border did not exempt the merchants from the "thirtieth" (*tricesima*) and other excise duties collected in the interior of the country.

II.2.2. *Thirtieth*

The earliest records of places being established to collect the thirtieth – as the Queen's revenue, but occasionally at the disposal of the King – appear during the reign of Andrew II.[901] The towns where thirtieth was collected were Dubica (Dubica, Croatia), Zagreb, Győr, Galgóc (Hlohovec, Slovakia), Esztergom and Kassa (Košice, Slovakia). Győr and Esztergom lay on the western trade route, Kassa and Galgóc on the north and north-western routes, and Zagreb and Dubica on the south and south-western routes.[902] This means that all of the towns where thirtieth duty was collected were on central transit-route points. The "thirtieth" – which was indeed set at one thirtieth of the value of goods during the Arpadian age – had to be paid at these places by merchants importing goods from outside the kingdom. The thirtieth was

[896] E.g. 1225: UB I. 107; ca. 1230: UB I. 129; 1237-05-06: EFHU 30; 1243-06-07: CDES II. 89.
[897] 1274: CD VII/5. 590; CDCr VI. 99-100. (RA no. 2565); A few years later, in 1281, half of the income was subdonated to the Cistercian house in Zagreb. Cf. ÁÚO XII. 341.
[898] The authenticity of the charter is, however, uncertain. (RA no. 4183.)
[899] CD VII/4. 72–73.
[900] Dipl.Eml. I. 343–345.
[901] Zsoldos 2005, 83–84; Pach 1990, 47.
[902] Collection of the thirtieth at Nagyszombat is first mentioned in the 1336 charter of Charles I, and it was most probably established than, in connection to setting up new transport routes. As there is no mentioning of the thirtieth collected at Galgóc later than 1316, this could have been relocated to Nagyszombat.

therefore an *ad valorem* duty, set at 8/240 of the value of the merchandise,[903] or eight times the known customs rate during the Arpadian age. Although the towns where it was collected lay in the interior of the country rather than at the border, they were on routes preferred by foreign merchants as they travelled through the Kingdom of Hungary, thus the King was assured of receiving his duty on imports.

II.2.3. *Direct taxes*

The freemen's pennies and the pondus

Until the reign of King Coloman, freemen were obliged to pay the King 8 denars. Coloman changed this arrangement so that 8 denars were still payable by freemen who lived on another person's land, although 4 denars of this could be redeemed by supplying the King with horses, carts or military service. Freemen who lived on their own land were exempt from the tax.[904] In 1222, Andrew II exempted church freemen from paying freemen's pennies,[905] and in the Golden Bull[906] he also exempted the "royal servants" (*serviens regis*) – freeman who provided military service to the kings. The royal privileges record another form of tax payable by freemen besides the freemen's pennies, the *pondus*. It was equivalent to five or six denars.

II.2.4. *Other royal revenues*

Twentieth, hundredth

The king was due twentieth and hundredth parts of the church tithe. It was Stephen I who laid down the law of the church tithe: "Any man to whom God has given ten parts in a year shall give one part to God."[907] The twentieth was paid by everybody subject to the church tithe;
we do not know when payment of the "twentieth" started, but it is certain that Béla II (1131–1141) granted the revenues from the royal twentieth in the Bishopric of Vác to St Margaret's Church in Dömös.[908] According to a charter issued by Charles I in 1319, the "holy kings" and the prelates of the kingdom had decreed that the twentieth and hundredth parts of the church tithe were due to the king, and it was also "under royal authority and within royal powers" that the remainder, due to the church, was to be gathered.[909] The twentieth and hundredth could, however, be held by barons of the kingdom, or by ispáns or alispáns,[910] either under special royal grant or by custom of their office (*ex speciali donacione regia aut ex consvetudine sui officii vel honoris*), but they also required to have the authority and powers sufficient to gather the remainder of the tithe. This tells us that both the twentieth and the hundredth were defined on the church tithe, and not as revenue additional to the tithe. Secondly, the tithe was originally collected by the king or the royal apparatus, and that is probably why he was due part of it for himself.[911]

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[903] Pach 1990, 72.
[904] DRMH 28.
[905] CDES I. 198.
[906] DRMH 32.
[907] DRMH 11.
[908] CDES I. 75.
[909] CDCr VIII. 530.
[910] The twentieth could be held by the *nádor* (*comes palatinus*), the hundredth by the *ispán* of the county (comes parochianus) Cf. CD II. 256.
[911] This can be also assumed from a privilege granted to the bishopric of Pécs by Bela III in 1190 (CD II. 255.) King Bela forbade the comes palatinus and the comes parochianus to collect the twentieth as well as the hundredth, which he granted to the bishop. Thereby it was also mentioned that church officials may turn to the *decimatores* of the palatinus or comes for help while collecting tithes. When Charles I granted privileges to the town of Bártfa in 1320 (CD VIII/2. 253), he disposed that half of the tithes should be given to the parish priest, the other half to the king. This demonstrates that sharing of church tithes was in practice even later.

II.2.5. *Collecta*

An additional source of revenue for the king in the 13th century, was the *collecta*, a tax levied in money or kind. This *collecta* could be imposed on the whole kingdom or specific regions or counties. The *collecta* could be, but was not always, confined to certain sections of society. In the Golden Bull of 1222, Andrew II pronounced that the *collecta* would not be collected on estates of royal *serviens*,[912] and followed this up in 1231 by confining the *collecta* to those subject to money tax (*census*) to the royal treasury (*qui fisco regio in debito censu tenentur*).[913] The nobles' exemption to payment of the *collecta* is also confirmed in later 13th century laws,[914] and a law of 1298 also exempted people living on church estates (*populos ecclesiarum et monesteriorum*).[915] The king could levy *collecta* to provide chamber's profit (*ratione lucri camere*), or for various other reasons.

III. Slavonia

A tax specific to the lands beyond the Dráva – mostly comprising Slavonia, but also including the parts of Pozsega, Valkó and Baranya counties on that side of the river –, was the *marturina*, known in Hungarian as *nyest*, meaning "beech marten". One source from 1300 states that *marturina* taxpayers (*marturinarius*) were those who in the past had given their lords the pelt of one beech marten a year.[916] By the reign of King Coloman, *marturina* was paid in money, equivalent to 12 Friesach denars per *mansio*.[917] This rate was gradually raised during the 13th century, but returned to 12 denars at the end and remained there in the 14th century. The *pondus* was set at seven denars in Slavonia, and payable by all those who were bound to pay *marturina*. Both the *marturina* and the *pondus* were payable to the king or to the prince who ruled Slavonia, but were usually granted to landowners together with their estates, thus becoming a landowner's tax. In the 14th century, both taxes, where they were still owed to the king, were subsumed into the Bán's *honor.*

The *collecta* was levied under the heading of chamber's profit. Béla IV (1235-1270) set its amount in Slavonia as seven denars (*collectam septem denariorum, a tempore ipsius patris nostri editam et indictam ratione lucri camere*).[918] The seven-denar *collecta* was first imposed on the occasion of the wedding between Béla IV's son Prince Béla and Princess Kunigunda of Brandenburg in 1264, i.e. as a special tax, but within a short time it became an annual tax in Slavonia, collected under the heading of chamber's profit.[919] Chamber's profit was the province of the king's *magister tavernicorum* in the 13th century, but was also acquired by the Bán in 14th century.

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[912] DRMH 32.
[913] DRMH 37.
[914] DRMH 40 and 43.
[915] DRMH 51.
[916] Tkalčič 1874, 22.
[917] CDCr III.241.(RA no. 407.)
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