

The Geobotany of Medieval Hungary: a Preliminary Report

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Introduction

Old Hungarian plant identification is usually traced back to the *Herbarium* of Peter Melius Juhász (1578, Kolozsvár; today Cluj-Napoca, Romania) and to the *Stirpium nomenclator pannonicus* of Carolus Clusius (1583, Németújvár; today Güssing, Austria). Earlier, easily identifiable data can be gleaned from the Hungarian marginal notes of the illustrated Casanate Corvina (1470-1500) and some early herbals, such as the *Ortus sanitatis* (~1525), the *Herbolarium* (1500-1540), or the exemplars with commentaries of L. Fuchsius (sixteenth century) and Dorstenius (sixteenth-seventeenth centuries).¹ Earlier, but more uncertain data, identified only by name, can be found in the abundant plant-name material of the first dictionaries (Dictionary of Beszterce, around 1395; Dictionary of Schlägl, around 1405; Dictionary of Sopron, around 1435; etc.) and in the early Hungarian glosses.²

The plant-name vocabulary of our medieval charters is much earlier and richer. Szamota analysed the early Hungarian plant names *berkenye* (service), *fűzegy* (willow), *kőris* (ash), *körtvély* (pear), *mogyoró* (hazel), *nyír* (birch), *som* (cornel) and *szil* (elm) from the foundation charter of the Tihany Abbey (1055).³ The data of the *Oklevélszótár* (Charter dictionary) have no annotations on their origins (place);⁴ the data published in the different charter collections (e. g., B.

¹ Tamás Grynaeus and József Papp, "Régi magyar (gyógy)növénynevek, 15.-17. század" [Old Hungarian (medical) plant names, fifteenth-seventeenth centuries], *Communicationes Historiae Artis Medicinae*, 1977, 31-49.

² See *Régi magyar glosszárium* (Dictionary of Old Hungarian glosses), eds. Jolán Berrár and Sándor Károly (Budapest: Akadémiai Kiadó, 1984).

³ István Szamota, "A tihanyi apátság 1055-iki alapítólevele" (The foundation charter of Tihany Abbey from 1055), *Nyelvtudományi Közlemények*, 25 (1895), 129.

⁴ *Magyar oklevél-szótár* (Hungarian charter dictionary), eds. István Szamota and Gyula Zolnai (Budapest: Horánszky, 1902-1906, reprint, 1984).

Ila, Gy. Györffy, I. Bakács, etc.⁵) are not only rich sources of medieval popular plant knowledge, but, because they are locatable, enable conclusions on medieval geobotany as well. The data series can be enlarged by the data of further charter collections, such as the charters on forestry published by Károly Tagányi, or the volumes of the charters from the Angevin time or of King Sigismund.⁶

Precursors and previous works

Most of the previous works made mistakes by projecting the actual geobotanical landscape back for a thousand years,⁷ or by drawing conclusions from the climatic data of today. Even the work of Prinz and Teleki refers several times to the fact⁸ that the woodland limit was gradually driven back towards the mountain regions of the Carpathian Basin in historic times, and that clear-cutting in the vicinity of towns and castles caused considerable devastation to woods. Sándor Somogyi outlined his opinion first in the third volume of the work of Hajdú – Kristó – Róna-Tas,⁹ then in the third chapter of the first volume of the History of Hungary (*The natural landscape of the Carpathian Basin at the time of the Hungarian Conquest*).¹⁰ He reconstructed a hydrological map based on the 1938 work of Lászlóffy concerning the situation before river regulation. By means of a complex analysis of climatic-zonal

⁵ Bálint Ila, *Gömör megye* (Gömör county), 4 vols., (Budapest: MTA 1941-1969); György Györffy, *Az Árpád-kori Magyarország történeti földrajza* (Historical geography of Hungary in the Árpadian Age), 4 vols. (Budapest: Akadémiai Kiadó, 1987-1998); István Bakács, *Hont vármegye Mohács előtt* (Hont county before Mohács) (Budapest: Magyar Országos Levéltár, 1971).

⁶ Károly Tagányi, ed., *Magyar Erdészeti Oklevéltár* (Charters of Hungarian forestry), 3 vols. (Budapest: Országos Erdészeti Egyesület, 1896); *Zsigmond kori oklevéltár* (Charters from the age of Sigismund), 6 vols. (Budapest: Akadémiai Kiadó and Magyar Országos Levéltár, 1951-1999).

⁷ The same mistake was committed by many of the linguistic-protohistorical works as well. See Péter Veres, "Tanulmányúton az őshaza nyomában a Szovjetunió földjén" (Field-trip in the Soviet-Union, investigating the Hungarian country of origin), *Történelem és kultúra*, 5 (1990), 86-89. An exception is Gyula László, *Őstörténetünk legkorábbi szakaszai (A finnugor őstörténet régészeti emlékei a Szovjetföldön)* [The earliest periods of our prehistory (Archaeological remains of Finno-Ugric prehistory in the Soviet Union)] (Budapest: Akadémiai Kiadó, 1971).

⁸ Gyula Prinz and Pál Teleki, *Magyar földrajz (A magyar munka földrajza)* [Hungarian geography (Geography of Hungarian labour)] (Budapest: n. p., 1938), 70-243, see the map on page 72.

⁹ *Bevezetés a magyar őstörténet kutatásának forrásaiba* (Introduction to the sources of Hungarian prehistory), eds. Péter Hajdú, Gyula Kristó, and András Róna-Tas, 2 vols. (Budapest: Akadémiai Kiadó, 1976-1985).

¹⁰ Sándor Somogyi, "A Kárpát-medence természeti képe a honfoglalás idején" (The Carpathian Basin at the time of the Hungarian Conquest), in *Magyarország Története*, ed. György Székely, vol. 1 (Budapest: Akadémiai Kiadó, 1984), 61-72.

conditions and of the pedological situation (like Prinz and Teleki), he prepared pedological and geobotanical maps. In this case, however, it is questionable whether the climatic circumstances of the Carpathian Basin were (approximately) the same as they are at present, and were before, after, and during the time of the Hungarian conquest. Györfly and Zólyomi demonstrate significant climatic changes just in this period, reconstructing a warmer climate for the eighth through the twelfth centuries and a cooler period with more abundant precipitation from the twelfth century onwards.¹¹ The authors try to use these changes to solve some problems that were unsolved up to now (e.g. the "decline" of the Avars). Their ingenious argumentation is rather anachronistic, and they make analogies with remote places. The climatic circumstances they use, such as the freezing of Icelandic fiords and the quantity of the ¹⁸O isotope in the layers of ice in Greenland, are influenced by the Gulf current, which has little effect on the Carpathian Basin. They do not explain the basis of their geobotanical map. The existence and the extent of climatic changes in those times, shown by the latest investigations of Lajos Rácz,¹² warn us not to leave these factors out of consideration.

In the introductory chapters written for each county, published in the volumes of Hungary's historical geography in the Arpadian Age, Györfly often refers to economic and geobotanical connections. He did not exploit all the possibilities of his rich data base, however.

In our work,¹³ we have analysed the written evidence for the different counties from the four published volumes of Györfly's monumental series.¹⁴ This data base was supplemented with information from other sources (e.g. Ila, Bakács) as well as with archaeobotanical data. At first, we tried to choose a region of varied relief where plains, hills, mountains, and river valleys meet, which presumably included the boundary of the range of some plant species. Our first results were described in a previous report.¹⁵ Up to now, we have finished the analysis of data concerning approximately half of medieval Hungary (map 1).

¹¹ György Györfly and Bálint Zólyomi, "A Kárpát-medence és Etelköz képe egy évezred előtt" (The Dnester-Danube region and the Carpathian Basin one thousand years ago), in *Honfoglalás és régészet*, ed. Kovács László (Budapest: Balassi, 1994), 17.

¹² Lajos Rácz, "Éghajlatingadozások a Kárpát-medencében 1490-1799 között" (Oscillations of climate in the Carpathian Basin between 1490-1799), *AETAS-ACTA IUVENEM*, 1986, 125-134; idem, "A középkor és kora újkor éghajlattanéről" (Climatological history of the Middle Ages and the Early Modern Period), *Agrártörténeti Közlemények*, 31 (1989), 118-147.

¹³ The research has been supported by the OTKA (National Fund for Scientific Research (project OTKA F029481).

¹⁴ Györfly, *Az Árpád-kori Magyarország történeti földrajza*.

¹⁵ András Grynæus and Tamás Grynæus, "Kísérlet a középkori Kárpát-medencei növényföldrajz rekonstrukciójára" (An attempt to reconstruct the medieval geobotany of the Carpathian Basin), *Botanikai Közlemények*, 86/87 (2000), 67-76.

Methodology

We used only data whose localisation and age were identifiable beyond doubt. The non-locatable data of the Charter dictionary, those of the Hungarian Historical-Etymological Dictionary, and of the glosses are excellent when describing the plant knowledge in a given period, but they cannot be used for answering geobotanical questions.

We collected data for the whole period of the medieval Hungarian kingdom (founded in 1001), and usually do not exceed the year of the battle of Mohács (1526), which traditionally signifies the beginning of the Ottoman conquest.

The data types of charters used and the limits of analysis are the following:

- 1) Toponyms formed of plant names. These can be localised in space and in time, their presence in the written sources can be followed through the centuries, but the exact meaning of the name *there* and *then* is not known.
- 2) Latin and Hungarian plant names occurring in perambulations. Among them, there is a surprisingly great number of small, herbaceous plants. These data, too, can be well located in space and time, but the exact, botanically definable meaning of the word remains unknown here as well. Nevertheless, the simultaneous appearance of the Latin and the Old Hungarian name ("...quae vulgo ... dicitur") allows some restricted identification.
- 3) The localisation in space of personal names originating from plant names is more difficult because of mobility. In some cases even the exact genesis of the toponym remains doubtful, whether the process occurred was *plant name* > *family name* > *place name*; or *plant name* > *place name* > *family name*. The exact meaning of the contemporary word is unknown here as well.

Plant remains found in archaeological excavations can be well localised in space (although an important condition, namely that the plant be native of the closest area of the site, is not always fulfilled). These remains may be dated with some restrictions and their botanical identification is possible, too. However, we do not know what they were called by their contemporary users. Therefore, these two types of data – archeobotanical remains and plant names – complement each other.

Benefits and difficulties of the periodisation of the material

We have divided the given period into centuries in order to distinguish the constant and the changing elements and also in order to make more precise conclusions. Although a great part of our material would allow more exact

dating – as one can see in list 1 –, and periodisation according to centuries is somewhat formal since it does not at all correspond to historical, economic, or social events, we prefer to retain this type of periodisation. The reasons for our decision are the following:

- 1) This fits the conventions of history best.
- 2) The age of some data cannot be defined more precisely, therefore we would have to omit them.
- 3) The toponyms **may** refer to a much **earlier time or situation**. "The difficulty lies in the fact that a toponym does not appear at the moment of its birth, **but in some cases only decades or centuries later**, usually when a legal act or a change in the legal situation worth recording happened in the geographical area of the place name. ... Between 866 and 1002, i. e. for more than a whole century we do not know **any** place name in the Carpathian Basin, ... and our knowledge concerning the eleventh and twelfth centuries is also very limited because of the well-known lack of written sources."¹⁶ Here, we have to mention that Makkay, following the opinion of Melich,¹⁷ considers the place names *Körös*, *Gyertyámos*, *Kökényér* – among others – loan-words from the time before 895, i. e. from the Late Avar Period.

As we did not want to deal with the much-debated questions of the Hungarian conquest period, we used the term "Middle Ages in Hungary" in a broader sense. We have included archaeological data from the 9th century as well as written evidence from the sixteenth, or even from the seventeenth century, for instance in the case of rare plants. However, the overwhelming majority of our material remains in the period described above, i. e. between 1001 and 1526.

This uncertainty in the age does not concern the plants appearing in the perambulations, although an older landmark-tree can remain at its place for 50, 100 or 150 years.

Methods

A data base was developed¹⁸ (list 1), following the order of the counties according to Györffy. From this database one can sort the entries by county or a larger region, by century or by plant species. One can also sort them by origin, i. e. place name, linguistic aspects (e. g., from perambulation), archaeological find identified to species, or persons' names. We included data originat-

¹⁶ Gyula Kristó, "Szempontok korai helyneveink történeti tipológiájához" (Typology of our early toponyms), *Acta Univ. Szegediensis de Attila József nominata, Acta Historica*, 55 (1976), 5, 7.

¹⁷ János Makkay, *A magyarság keletkezése* (Dating of the Hungarian people) (Budapest: author, 1993), 64.

¹⁸ With the help of Windows-Excel.

ing from the same place in different centuries. However, we have to stress that the appearance of a data item in a given time does not mean that the plant in question was not a native of the region before and after. The inverse is also true: the absence of data concerning a plant in a given period does not mean that it was not native there, because the written records as well as the archaeological excavations are rather accidental. In other words: **the data must not be evaluated as regressive and progressive, positive or negative evidence.**

On the basis of the data series different maps were drawn.¹⁹ As examples, we give the data on three species (grape, oak, and beech) from the eleventh to the sixteenth centuries, originating from the counties analysed up to the present, and we summarise the questions raised by these data.

Conclusions and questions

At present, the database consists of 3680 items that represent 188 different plant names. This quantity of data is statistically large enough to allow some modest conclusions concerning the medieval geobotany of the region investigated:

Grape: In her article of 1980, Melinda Égető outlined the vineyard regions by means of 56 toponyms from the whole of medieval Hungary.²⁰ Our preliminary 405 items (map 2-6) presented here allow us much more reliable conclusions. It is important to stress that our further work will process the data of several counties (e.g. Veszprém, Zala) where viticulture played an important role in agriculture.

Even on the basis of our present data, we can argue that grapes do not demonstrate the thesis of Prinz and Teleki, repeated consistently ever since, of the "gradual spreading towards the north" of viticulture. Contrary to this, even the few eleventh century data draw the same northern border as later records. It is just the increasing of the area of cultivation that can be observed. Some regions, such as the valley of the Hernád, were planted with grapes from the thirteenth century onwards.

We hope that our complete data base concerning vineyard areas will allow us to decide, whether M. Belényesi²¹ or M. Égető is right in this debate. The latter author states that in the Arpadian Period viticulture was restricted to the vicinity of rivers, while hills and lower slopes of mountains were brought into cultivation only later.

¹⁹ With the help of AUTOCAD and a program developed at the Archaeological Institute of the Eötvös Loránd University, Budapest. We are greatly indebted to Balázs Holl for his indispensable help.

²⁰ Melinda Égető, "Középkori szőlőművelésünk kérdéséhez" (On the question of medieval wine culture in Hungary), *Ethnographia*, 91 (1980), 53-78.

²¹ Márta Belényesi, "Szőlő és gyümölcsstermesztésünk a XIV. százdban" (Vine- and fruit-cultivation in the fourteenth century), *Néprajzi Értesítő*, 37 (1955), 11-28.

Oak: The data on oak (477 items) show that the range of this genus covered the whole Carpathian Basin (map 7). The possibility of identification of different oak species may offer new points of view for the long debate on the interpretation of oak data (see the works of Camillo Reuter²²):

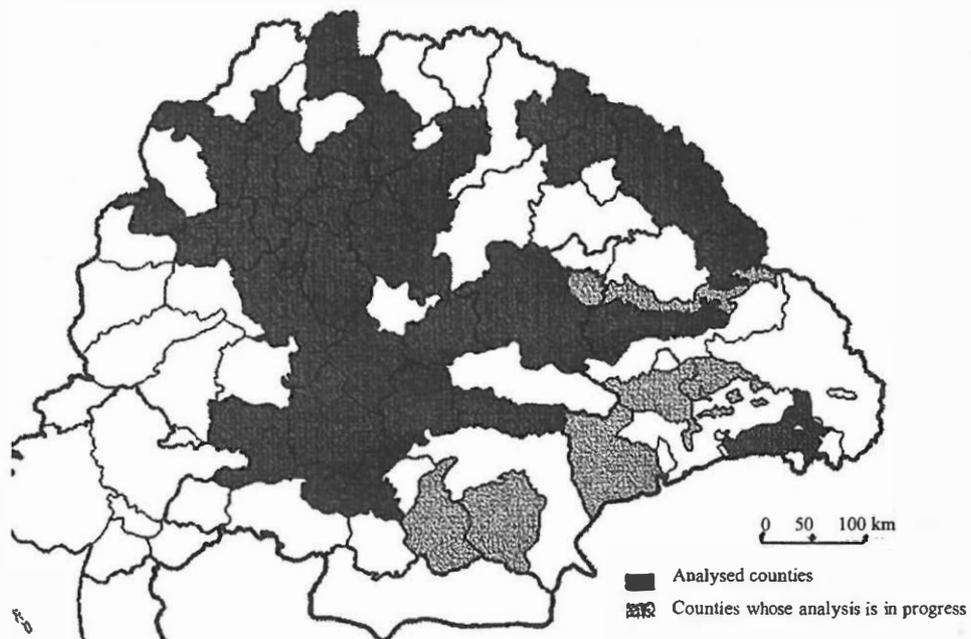
- *Ilex* appears often (but not always) near rivers, i. e. on wetlands.
- The range of 'haraszt' (another oak species) is not identical with the area of the other oak names, it appears even in places where other oak species do not occur.

Beech: Somogyi, Györffy, and Zólyomi place the lower border of beech much farther to the north than our data and the geobotanical map of Zólyomi (1936)²³ show. Moreover, according to the plant name data (81 items – map 8) we find – surprisingly enough – small beech spots in Borsod county, near the Tisza River (Nemesbikk, in the region of Palkonya), and at several places on the Great Hungarian Plain. If the plant called "bükk" (beech) in the sources is identical with *Fagus silvatica*, the actual range of this tree (near the Mátra Mountains) differs considerably from what we have found for the Middle Ages. This astonishing difference awaits explanation. In the higher mountain areas, the range of beech according to our data and its recent appearance approximate each other.

We hope that once our work is completed it will be a useful tool for historians to reconstruct and understand the periods of Hungary's earlier history.

²² Camillo Reuter, "Surkuscher" (an Old Hungarian oak name), *Magyar nyelvőr*, 88 (1964), 198-200; idem, "Tölgy és haraszt" (two Old Hungarian oak names), *Magyar Nyelv*, 61 (1965), 80-89; idem, "Haraszttöl és Tölharaszt" (two Old Hungarian oak names), *Magyar Nyelv*, 65 (1969), 76-79; idem, "Adatok a régi magyar fa- és erdőnevek ismeretéhez" (Data on the knowledge of Old Hungarian tree- and woodland-names), in *Az erdőgazdálkodás története Magyarországon* (The history of forestry in Hungary), ed. Szabolcsné Kolossvary (Budapest: Akadémiai Kiadó, 1975), 80-87.

²³ Rezső Soó, Zoltán Hargitai, and Kálmán Keresztes, "Europa flóra és vegetációtérképe" (Geobotanical map of Europe), *Acta Sci. Mathem. Natural. Univ. Francisco-Josephina*, 22 (1944), 1-15. Tibor Hortobágyi and Simon Tibor, *Növényföldrajz, társulástan és ökológia* (Geobotany, phytocenology and ecology) (Budapest: Tankönyvkiadó, 1991).



Map 1: The analysed counties of Hungary

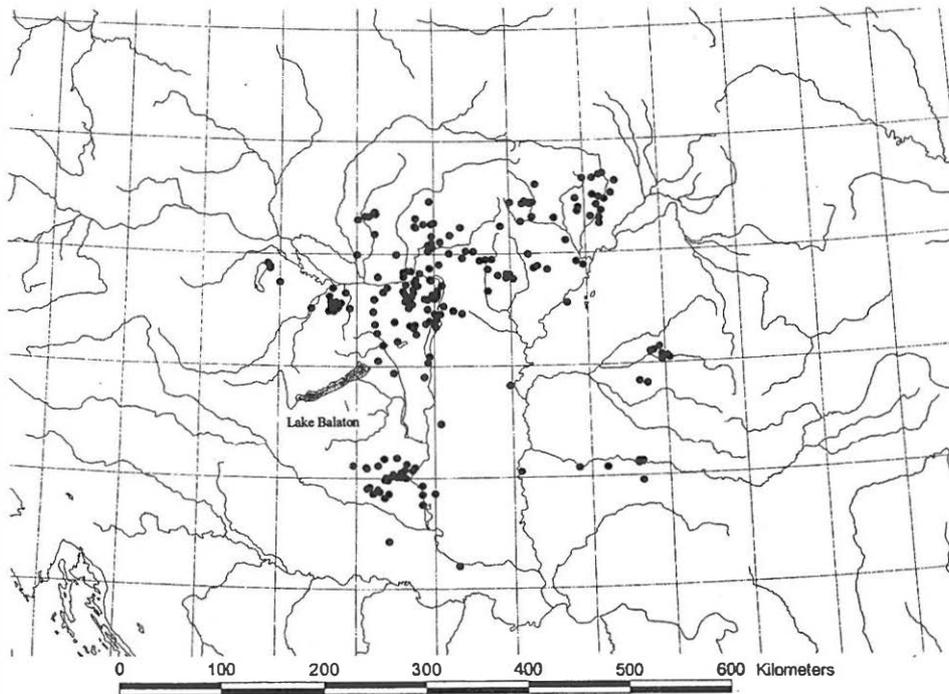
Longitude, degree*	Latitude, degree*	Long.EOTR*	Lat. EOTR*	Century	PLANT NAME (genus)	PLANTNAME (species)	Locality	Date f.	Date l.	Charter's text**	COUNTY	SOURCE, vol., p.
21,310	48,610			13	nyár		Csany	1255				
		544469,145	78878,320	14	rúzsza		Dobsza	1329		a.pomika	Abauj	Gyö.1.75
21,250	48,610			13	éger		Ényicke	1267		Rusasz.	Abauj	Gyö.1.78
		800407,534	333663,570	14	saolo		Fornó	1309		Egnus potoka hn.	Abauj	Gyö.1.78
		803386,200	331563,270	13	csipke		Fügöd	1246		vinea	Abauj	Gyö.1.81
		803386,200	331563,270	11	füge		Fügöd	1067	1246	chipkebokor	Abauj	Gyö.1.82
		803386,200	331563,270	13	nyár		Fügöd	1246		Fygudy szn. terra Fyged	Abauj	Gyö.1.81
		828546,060	357614,440	13	alma	vad-	Füzér	1270		a.miga qui populus nominatur	Abauj	Gyö.1.82
		828546,060	357614,440	13	bükk		Füzér	1270		a. pæmi silvestris	Abauj	Gyö.1.83
		828546,060	357614,440	13	fuz		Füzér	1264		Bykf cw.-potok hn,sil. bykerdev	Abauj	Gyö.1.82,83
		828546,060	357614,440	13	komlâ		Füzér	1270		Fizer hn.	Abauj	Gyö.1.82
		828546,060	357614,440	13	moha		Füzér	1270		t. Kumlovs hn.	Abauj	Gyö.1.83
		828546,060	357614,440	13	tölgy	ilcx	Füzér	1270		Muhuspotok hu.	Abauj	Gyö.1.83
		788165,080	342417,830	14	mogyoró		Gadna	1320		ilex	Abauj	Gyö.1.83
		788165,080	342417,830	14	silex		Gadna	1320		Monyorosberek hn.	Abauj	Gyö.1.83
		788165,080	342417,830	14	szolo		Gadna	1320		a.silicis, a.magna silex	Abauj	Gyö.1.83
		788165,080	342417,830	14	tölgy		Gadna	1320		vinea	Abauj	Gyö.1.83
		788165,080	342417,830	14	tölgy	ilcx	Gadna	1320		a. magyngha	Abauj	Gyö.1.83
21,140	48,440			14	tölgy		Gályá	1332		a. kercy	Abauj	Gyö.1.83
21,180	48,670			14	hárs		Card	1330		a. ilex	Abauj	Gyö.1.84
21,180	48,670			14	körte		Card	1330		Haaspatokf cw hn.	Abauj	Gyö.1.85
21,200	48,700			13	szolo		Gerbec	1292		a. piri	Abauj	Gyö.1.85
		805919,475	332136,080	14	?		Gibán	1316		bordézsma	Abauj	Gyö.1.87
		808226,651	324282,470	13	?		Golop	1258		rubetum	Abauj	Gyö.1.87
		808226,651	324282,470	13	cserezsnye		Golop	1258		per m-s q.dicitur Scomuch osofa	Abauj	Gyö.1.88
		808226,651	324282,470	13	gyümölcsény		Golop	1258		a. merasi (!)	Abauj	Gyö.1.88
		808226,651	324282,470	13	rekettye		Golop	1258		a. gymulchen	Abauj	Gyö.1.88
		808226,651	324282,470	13	som		Golop	1258		requiciarbukar	Abauj	Gyö.1.88
		814016,780	350811,830	13	saolo		Gönc	1270		Scomuch hn.	Abauj	Gyö.1.88
21,290	48,590			13	körte		Gönc	1290		bordézsma	Abauj	Gyö.1.89
21,290	48,590			13	tölgy	quercus	Gönyu	1290		a.piri	Abauj	Gyö.1.90
21,100	48,730			14	körte		Hilyé	1332		a.querci	Abauj	Gyö.1.90
										Korthweleshygh,Kurthwclshyeygh	Abauj	Gyö.1.91
20,980	48,550			14	éger		Jánok	1323		hn.		
20,980	48,550			14	tölgy	ilcx	Jánok	1323		a.gurfa	Abauj	Gyö.1.95
										a.ilcx	Abauj	Gyö.1.95-96

* Geographical coordinates of localities of present Hungary are given in EOTR codes (uniform national space-informatical system).

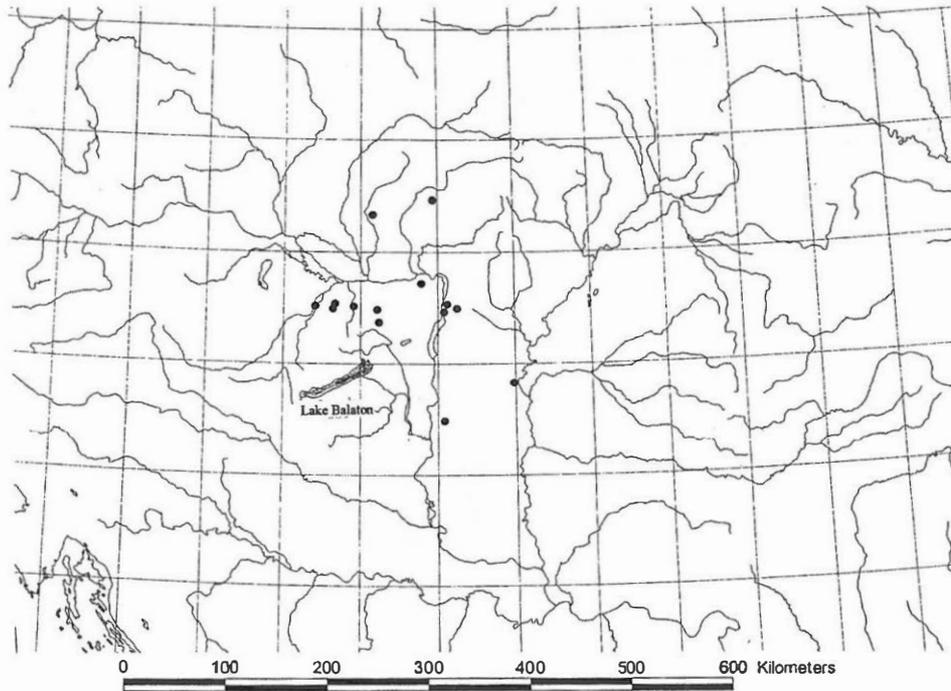
Other coordinates are given in degrees.

** hn = toponyms szn = personal names

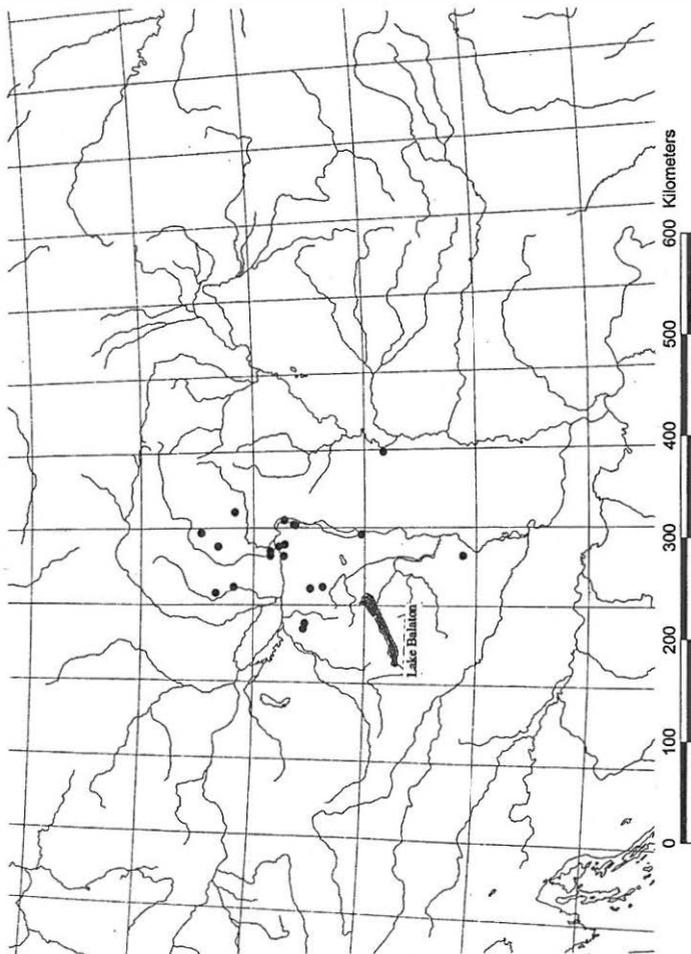
List I: Example of the entries into the data base



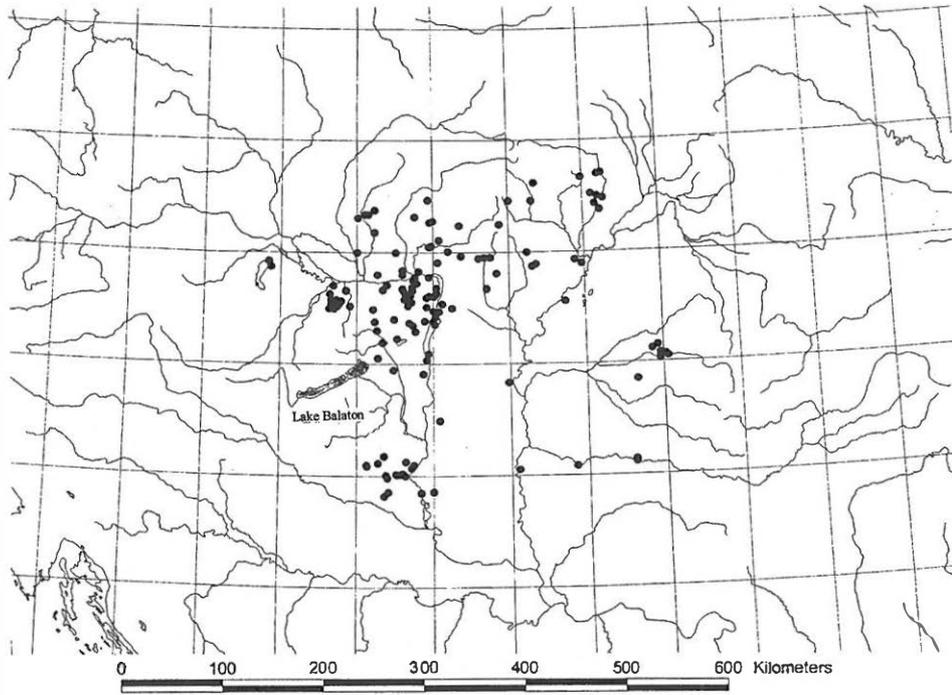
Map 2: Vineyards, all data (eleventh-fifteenth centuries)
from the analysed counties



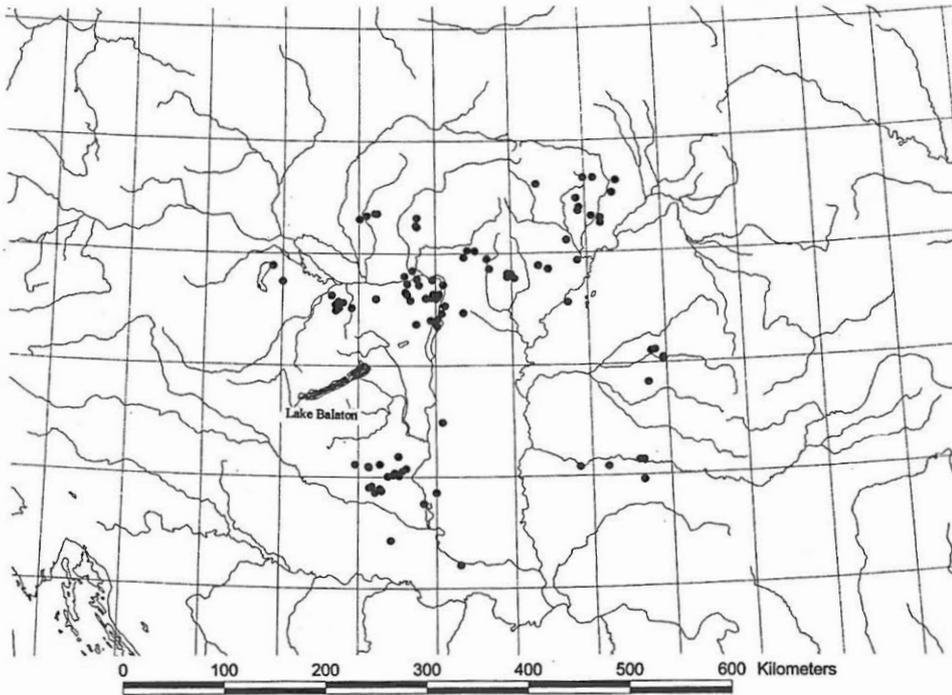
Map 3: Vineyards, eleventh century



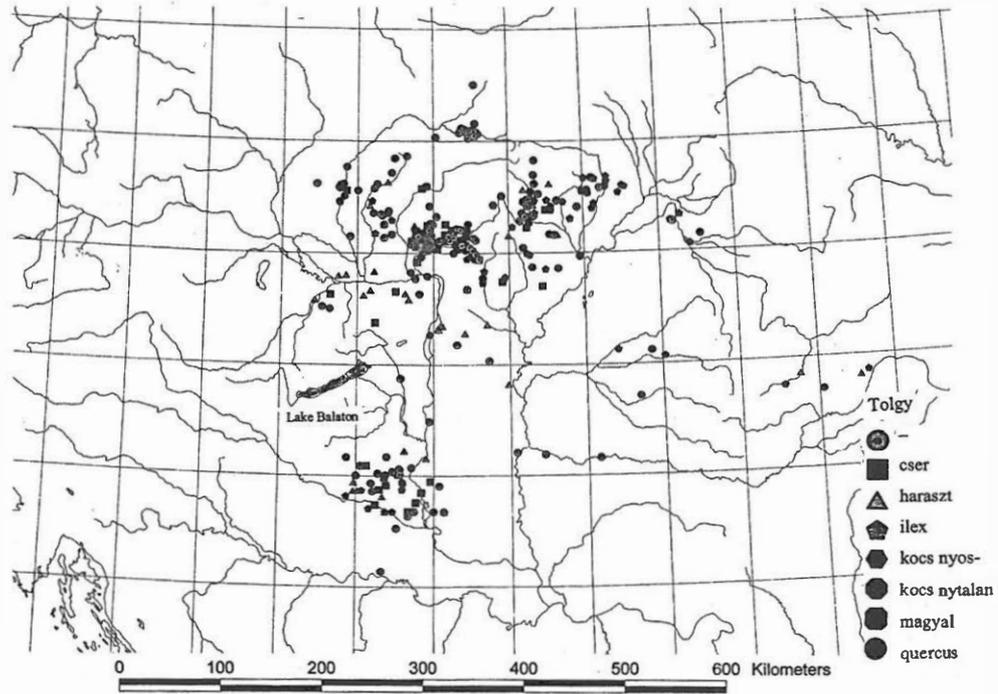
Map 4: Vineyards, twelfth century



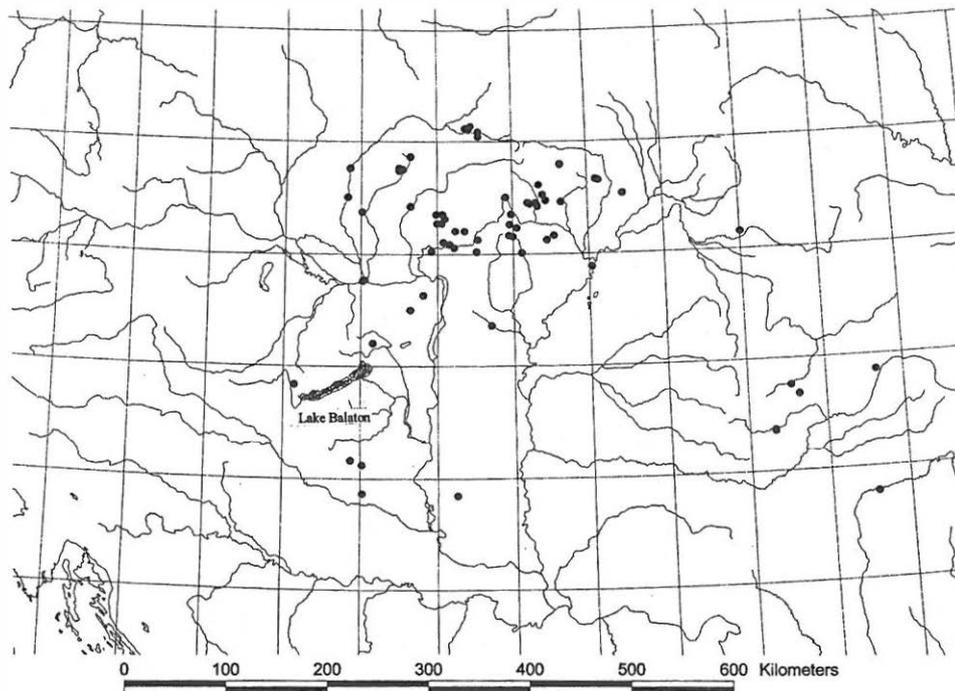
Map 5: Vineyards, thirteenth century



Map 6: Vineyards, fourteenth century



Map 7: Oak, all data (eleventh-fifteenth centuries)
from the analysed counties



Map 8: Beech, all data (eleventh-fifteenth centuries)
from the analysed counties

MEDIUM AEVUM
QUOTIDIANUM

44

KREMS 2001

HERAUSGEGEBEN
VON GERHARD JARITZ

GEDRUCKT MIT UNTERSTÜTZUNG DER KULTURABTEILUNG
DES AMTES DER NIEDERÖSTERREICHISCHEN LANDESREGIERUNG

niederösterreichkultur

Titelgraphik: Stephan J. Tramèr

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*From the Latrine, through the Woods, and into the Lake:
Ecological Samples from Medieval East-Central Europe*

An Introduction

Recycling is nowadays a decisive issue in ecology. This holds true for historical ecology in East-Central Europe as well, albeit in a very different sense. Whereas reusing old material is doubtlessly valuable in environmental protection, the same is rather questionable, if the old material comprises historical sources. The reason to put together and present the following four essays was to help, as far as the authors could, recycling be back where it truly belongs.

Historical ecology is a well-established discipline in Western Europe. In East-Central Europe, much progress has been made recently, and now many scholarly publications appear on the subject. In other words, the *methodology* is understood and applied. However, it is only in exceptional cases, such as the climatology research in Brno, Czech Republic, or the excavations of the medieval royal garden at Visegrád, Hungary that the methods are applied on sources, be them written or archaeological that are freshly gathered for the topic. Historical ecology is an essentially *quantitative* field of research. Before the writing process commences, a large amount of data must be collected. Furthermore, the type of data we use is atypical for former research. A chance mention of heavy rains in a charter, or pieces of seeds in a latrine did not use to be considered significant. This may well be true if they stand alone; but *all* occurrences of heavy rains for a hundred years, or *all* plant remains in a latrine carry otherwise unreachable information. The task, then, is twofold: we have to collect as much data as we can, and we have to look for the type of data that has not yet been searched for.

Many learned articles on the historical ecology of East-Central Europe fail to perform this task. They take what was published before and examine it from a different angle, which, although an inevitable step, does not suffice alone.

The connection between the otherwise rather diverse essays presented here is that they all try to analyse sources hitherto unexplored. We hope that we live up to the requirement of introducing essentially new data to the common knowledge. Whether our analyses may also stand the test of time is for the reader to decide.

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