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The importance of water in the life of the rural settlements of Medieval Hungary

Die Bedeutung von Wasser für die ländlichen ungarischen Siedlungen im Mittelalter

L'importance de l'eau dans l'environnement rural de la Hongrie médiévale

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A study about the use of water can also mean a trivial topic. Due to the fact, that the water represents an essential element of the human life. As a consequence of this, the aim of this communication is not to bring proves to underline this importance, but to show the different ways of its utilisation. The main question to be posed is therefore not why but how. The importance of the investigation of the different ways of the water usage not only in Medieval Hungary but also in the other countries of Medieval Europe, is underlined through the fact that results of this analysis can be treated as an indicator. An indicator to show not only the character of the natural environment, but also the efforts of every single community, to adapt itself to it.

In my attempt to give a brief overview of the researches concerning the usage of water in the rural settlements of Medieval Hungary I have to deal with an abundance of sources big enough to cause difficulties in the presentation. Further difficulties derive from the fact, that the vast majority of the items in this database is fragmentary, and needs an explanation in order to be evaluated. Therefore I had to pick out some data, mainly archaeological evidence, and – instead of seeking the totality – to present the importance of water by interpreting these, from my point of view, characteristic sources, and to outline trends according to their testimony.

My first remark is refers to the topography of the rural settlements of Medieval Hungary. In the scientific literature one can often find a simplifying opinion about the desert-like natural environment of Hungary. This wide spread opinion relies on the fact, that the Great Plain, the largest region of the land, is the westernmost part of the Eurasian steppe. But one must not forget an obvious discrepancy in the humidity of the various parts of this steppe, caused by the different level of the rainfall (*Györffy 1977*, 402, fig. 57; *Györffy – Zólyomi 1996*, 910, fig. 11). As the central part of the Carpathian basin is – and most likely was – the moistest part of this steppe, it can be by no means compared with dryer regions, e. g. with the Khazak steppe, Takla Makan, or the desert of Gobi. Furthermore, as the Carpathian basin is extremely reach in water courses and lakes, the most common natural environment was most likely not the dry desert but the swamp. To such an extent that Károly Kogutowicz, one of the most known geographer of Hungary in the first half of the 20th century, reconstructed this basin at the times before the great anti-inundation works of the 19th century, as one eighth part of it was covered with water (evaluation of the quoted map: *Bálint 1991*, 196–197; reprint with modifications: *Hidas (ed.) 1998*, 108). The credibility of the Kogutowicz's reconstruction was reinforced by the fact, that the same result was obtained through several geologists, dealing with this problem recently (*Sümegi 2003*, 177–178). All studies of this type emphasised the importance of the inundation areas around the water courses partially and/or temporarily covered with water.

As the quoted reconstruction was carried out by geographers analysing geological sources, the question rises: are there archaeological databases to contribute in the favour, or perhaps to contradict against this reconstruction. In the early 1960ies began the program called "Archaeological topography of Hungary" led by the stuff of the Institute of Archaeology of the Hungarian Academy of Sciences (*Török 2002*, 22–23). This program is also carried out in 2003 but in a regrettably restricted way. The main cause of the decreased activity lies in the luck of finances, but there were and are also problems with the collaboration of the Institute with some local museums. Nevertheless, systematic and very thorough fieldwalking was carried out on more than 15 % of Hungary, and some 100.000 of archaeological spots were identified or reidentified and mapped on topographical maps of the scale 1 : 10.000. Concerning the importance of water courses in the topography of Medieval rural settlements the diversity of examined areas is an advantage in the analysis of the quoted mapping. The topographical investigations were carried out in the hilly county of Veszprém in Transdanubia (*MRT 1–4*), in the central part of the country, around the capital, Budapest (*MRT 5, 7, 9*), and – last but not least – in the hearth of the Great Plain, in the County of Békés (*MRT 6, 8, 10*).

Concerning the regions Northwest to lake Balaton, the so called Balaton-highlands, an interesting observation derives from the fact, that almost all findspots are lying beside little watercourses: streams running from the hills to the lake (*fig. 1*). The vast majority of findspots of the former villages were to be located close to the inundation area of these streams, on the borderline of the area affected by floods. In spite of the fact that the hills are not high, their top regularly does not exceed 150–200 meters, measured form the level of the lake. The water level of the quoted little streams varies

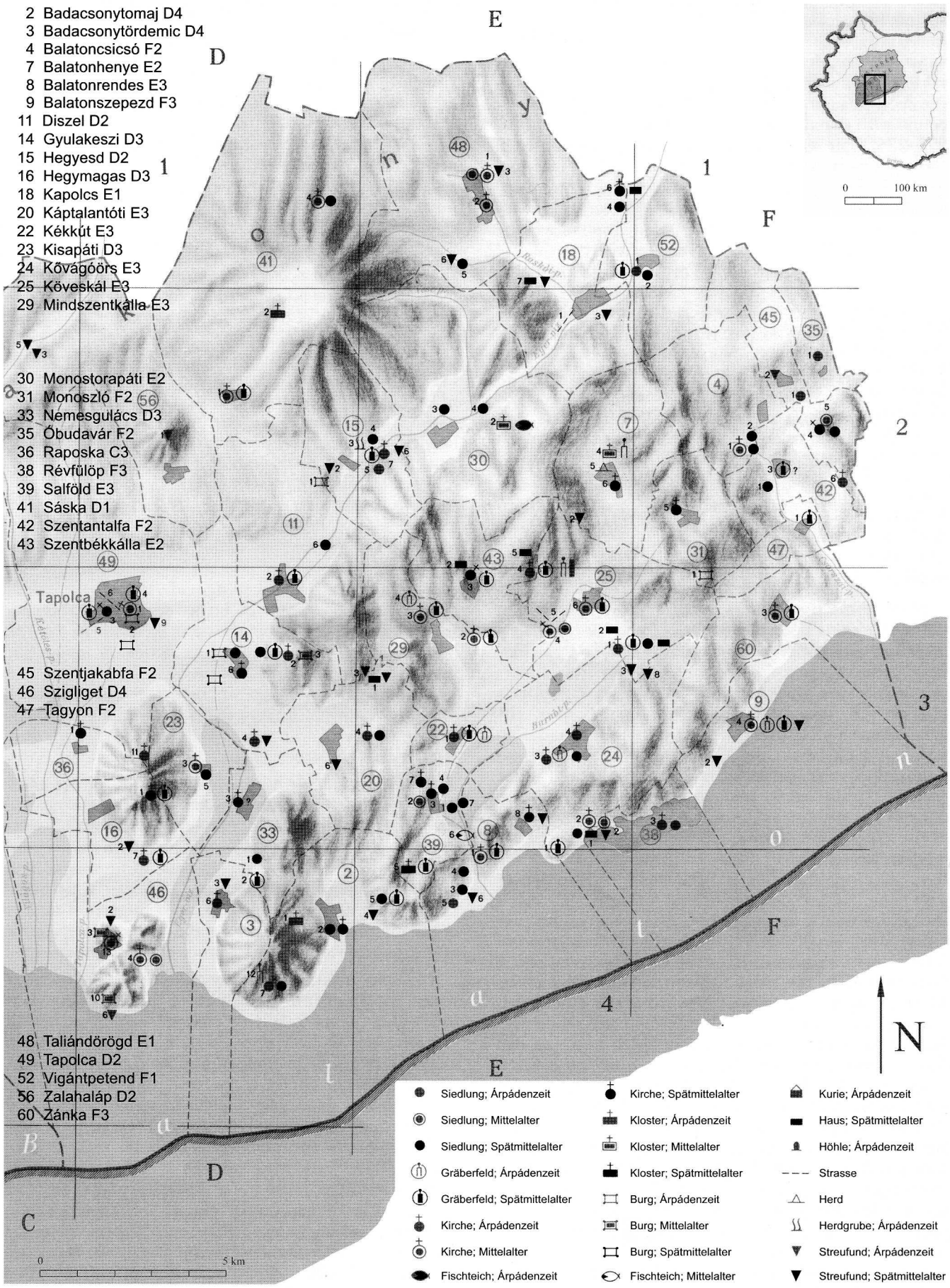

Fig. 1. *Medieval sites of the county Sümeg (after MRT 1, map Nr. 7 „Középkor").*

in the different parts of the year. The beginning of the spring is regularly treated as a flood-season, when these little water courses – aggregated by the melting snow and ice – can transfer to little rivers of considerable width, of coarse only for couple of weeks. As all the reconstruction of the climate of medieval Hungary count with considerable winter moisture (*Rácz 2003*, 235–236), one can assume, that the inhabitants of Medieval rural settlements North to lake Balaton had most likely only a kind of a limited fear from these spring floods. Considering the lake Balaton, the mapping of Medieval rural sites had also emphasised the variability of the line of its shore. The water surface of the lake was considerable bigger, than its regulated level – brought to its today level in the 19th century, with the building of the dam and the sluice-gate on the river Sió. Therefore is not surprising, that the lake – according to the topography of Medieval rural settlements on its shore – entered to the surrounding valleys in the middle ages, forming there deep bays. These dried up valleys are today part of holiday areas for tourists, but in the middle ages were these places most likely fishing areas close to the shore of the lake.

Another trend can be observed in the county Békés, i.e. in the central area of the Great Plain, in the inundation area of the river Körös. The analysis of *Béla Miklós Szőke* (*1980*, 181–203) had emphasised the fact that in this region the settlement units were all to be find on tiny hillocks, which are to their most part only 5–10 m higher than their surroundings (*fig. 2*). During the interpretation of the results of the topographical investigations it was assumed that the lower areas between these tiny hillocks were at least temporarily covered with water. Therefore they were represented with blue on the maps summarising the located sites. The conclusion about the great quantity of inundation areas was based on the comparative analysis of old descriptions and maps from the 18th century, some geological data, aerial photography and the fact that none of the recorded settlement remains had its parts in the areas lower than a specified contour line of the modern topographical maps. If this reconstruction fits the reality, the investigated area was a swamp, where only some half of the investigated area can be treated as a permanently dry soil. There is a considerable literature dealing with the ethnographical description of the traditional agriculture of the swampy areas of the Great Plain. (In the times before the regulation of the river Tisza, i. e. before the last third of the 19th century, in the inundation areas of the Great Plain existed a special type of agriculture, well adapted to its special geographical surroundings.) According to this database we can assume that the main agricultural activity of these areas was an animal-keeping, and the cattle was fed with the grass of the grazing grounds partially covered with water. Another important observation of the quoted topographical investigations was the emergence of very many little settlement units. The numerous appearance of the small settlement items was not unexpected. The possibility of existence of the settlement pattern consisting of temporarily used settlement places was raised already before the systematic field walking in the area of the Great Plain begun, by historians dealing with Medieval written sources (c.f. *Váczy 1958*, 296–302). The problem of the these small, more or less temporary structures is partly connected with the gradual transformation of the whole habit of the Hungarians' life in the first centuries after their Conquest of the Carpathian basin on the turn of the 9th and 10th century. The conquering Hungarians had namely led a specific, semi-nomadic way of life (*fig. 3.*) and it took centuries till the last traces of this economic and settlement system disappeared in their new homeland (*Váczy 1958*, 291–329; *Szabó I. 1966*, 14–35; *Makkai 1975*; *Györffy 1977*, 397–425; *Földes 1983*, 327–349; *Takács 1998*, 187–191; *2000*, 157–191).

If we try to get a closer look, and analyse data collected during one single settlement excavation, we can exceed the range of discussion of our study on further regions and excavations. Also in the relation of the inundation area give the two findspots near the village Lébény new points to be analysed (*fig. 4*). The two sites of Bille-domb (*fig 4: site Nr. 1*) and Kaszás-domb (*fig 4: site Nr. 2*) represent two narrow hills on the eastern border of a large swamp-area, the so called Hanság. But the natural environment of these two sites is also affected by the fact, that they are lying on the edge of the inundation area of the Danube. In spite of the fact, that these two sites are in a distance of some 5 km from the present riverbed of the arm of the Danube called Mosoni Duna, the contour lines of the modern topographical maps bear clear evidences of once-upon-a-time riverbeds, dried out former arms of the Danube. In the case of the two Lébény-sites there is also an archaeological evidence of the existence of the specific motions of the river bed. On the site of Barátföldpuszta are namely the remains of the roman Quadrata to be find (*fig. 4: site Nr. 3*). This was a fort and a port on the Danubian limes, even if the river runs today more than one kilometre northern of it.

If we want to draw a general conclusion for the interpretation concerning the environment of the quoted topographical researches and the two excavated sites of Lébény, we would have to emphasise the importance of the inundation areas. In case of he Carpathian basin one has to count with the presence of its inundated water as with one of the most important factors of the microtopography even if the today's watercourse of the nearest river is in a distance of several kilometres.

The next question is closely related with the usage of water in the rural environment, and for the first moment it seems to be very easy to solve. If we accept the tendency to live near a watercourse as a general characteristic of the topography of the rural settlements of Medieval Hungary, and the fact that this tendency was especially explicit in the Árpádian and Angevin Age, i. e. in the 10th to 14th century, the formulating of the question seems to be superfluous, whether there were other sources to obtain water, beside the utilisation of the water surfaces nearby. In spite of the natural environment rich in inundation areas, the answer seems to be positive, even if there are many sites without built features for gaining water. As a consequence of the limited scale of excavation one can be never sure about the total absence of wells on an exca-

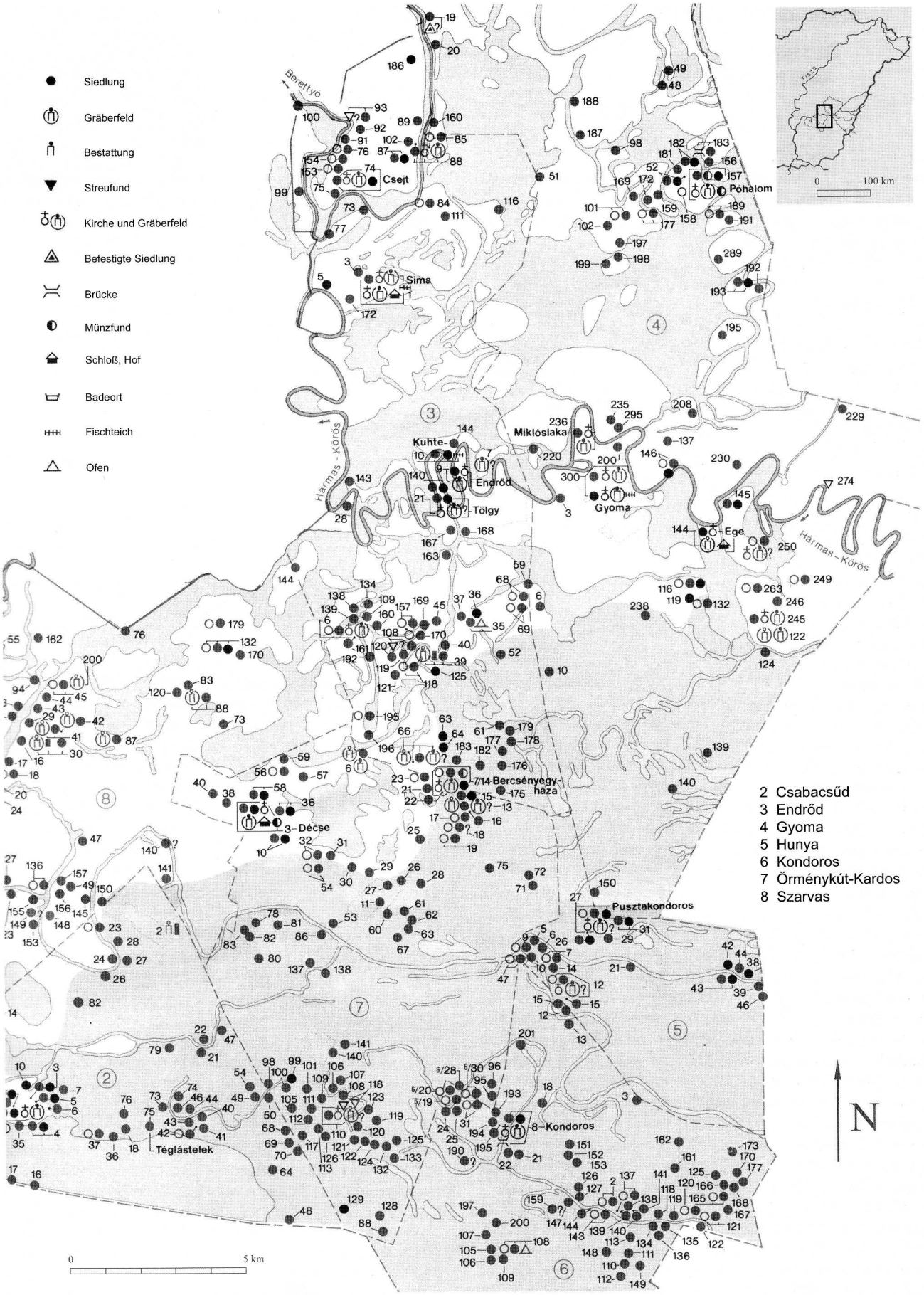

Fig. 2. *Medieval sites of the county Szarvas (after MRT 8, map Nr. 6 „Honfoglalás kor – Középkor").*

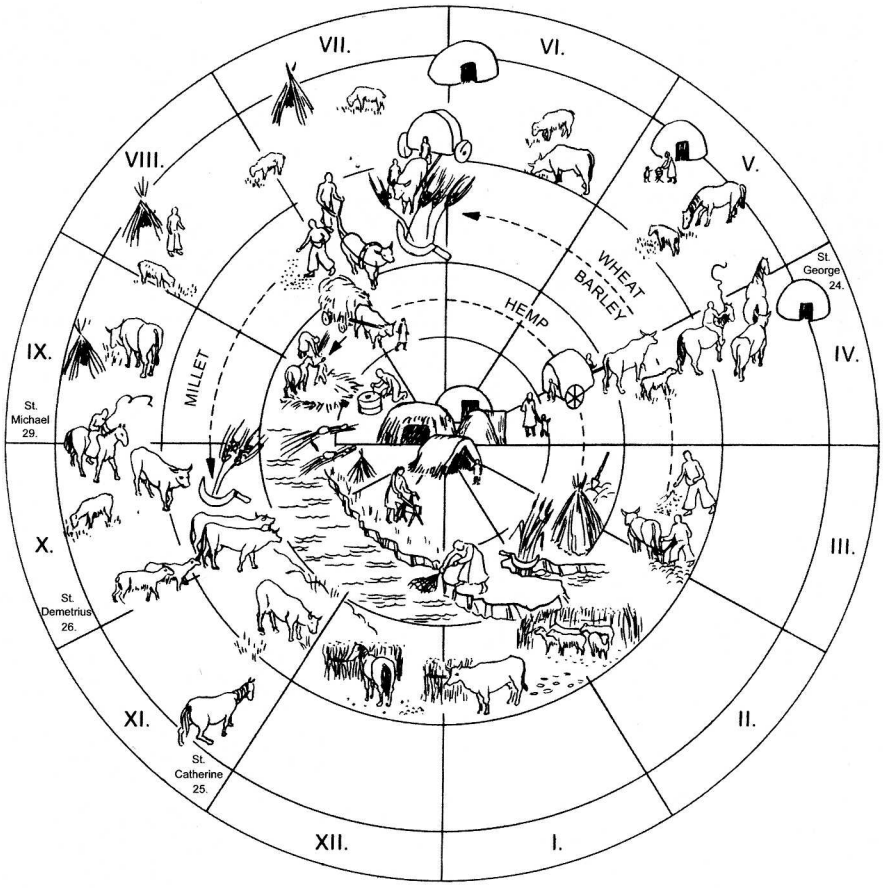

Fig. 3. *Diagram of the semi-nomadic cattle-breed (after Györffy 1977, 413, fig. 58 with modifications).*

vated Medieval rural settlement. The lack of its remains can be namely also interpreted with the fact, that it probably stood in an area not affected by the fieldwork. The topography of these wells within the settled area refer to the fact, that some of these wells were used by the whole rural community, contrary to others, which were most likely private facilities to obtain water. The excavated settlement features of the already mentioned two Medieval sites of Lébény are also in this respect very instructive, as on both of them were more wells discovered, with large parts of their substructure (*Takács 1998*, 186–187; *T. Németh – Takács 2003*, 89–101). For the analysis of the question formulated below, has the exact position of the wells within the settled area the greatest importance. On the site of Kaszás-domb, where a settlement form the late Avarian Age, i.e. from the 8th century was discovered, all the three wells stood in the southern the lowest part of the settlement. This arrangement of the wells suggests their common use – of coarse only if the settlement was inhabited by more than one family. Contrary to this, on the site of Bille-domb, where a rural settlement of 9th to 14th century was discovered, the latest wells were to be find not only on the narrow part of the inhabited area, but also almost on the top of the tiny hill. According to their replacement the latest wells of the settlement could of been used more likely as private features for gaining water. The chronology of the two sites raise the possibility of interpretation of the property of wells, as it went from the stage of common usage towards private devices. This tendency can be supported with the topography of the late Medieval rural site of Szentkirály, where the excavated well stood behind the row of the houses, obviously not on the street but in the garden (*Pálóczi-Horváth 1976*, 289; *Pálóczi-Horváth 1998*, 197, fig. 5). Though this conception seems to correspond with trends of some parts of the agrarian history of Hungary – so e. g. with the formation of the land in villain tenure, with pieces of ground hired by single families (*Solymosi 1994*, 666), the two quoted sites form a mass too little for a general conclusion. Especially if we count with the great ruptures in the settlement history of the western parts Carpathian basin on the turn of the 8th to 9th, on the turn of the 9th to 10th, and in 16th–17th centuries. At this point I have to refer to the ethnographic material, there are namely an abundance of examples for wells on the streets in common use, also from the Hungarian villages on the end of the 19th or at the beginning of the 20th century. The ethnographic parallels suggest therefore a cautious approach, i. e. not to count with skills based on a hypothetical "line of development".

Till yet I have treated the importance of water in the rural environment of Medieval Hungary trough the impact of the inundation areas on the settlement topography and the need of obtaining drinking water. Furthermore, one must not forget the well known importance of the rivers, lake or streams in the nutrition. Medieval Hungary was famous by the abundance of fishes in its water courses. Galeotto Marzio, a humanistic scholar on the court of king Matthias was the first West European, who made this abundance per-

Fig. 4. *Topographical map of the surroundings of the village Lébény (Western Hungary).* ***1.*** *Site of Bille-domb.* ***2.*** *Site of Kaszás-domb.* ***3.*** *Site of Barátföldpuszta – Roman fort of Quadrata.*

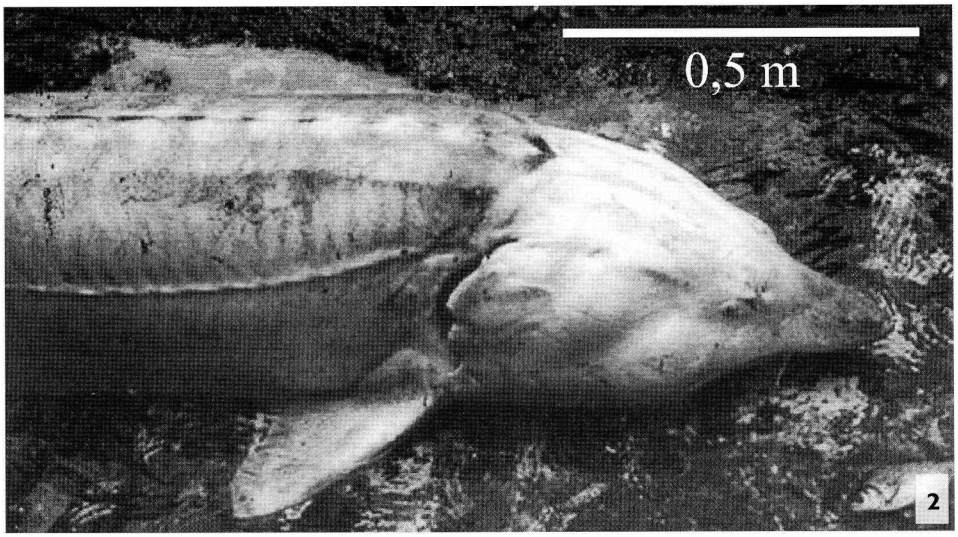

Fig. 5. 1. *Coat-of-arms of Ferenc Eresztevényi from 1414.* ***2.*** *One of the last sturgeons, cought in the Danube near Paks in 1987 (weight: 181 kg.) Photo: † István Takács.*

ceptible with a statement, hard to believe (*Marzio 1977*, 21–22). According to his point of view was the water only to a scale of two thirds a component of the rivers and lakes, because of the fact that one third was made by the mass of fishes. According to another, later description made by the English traveller Edward Brown in 1673 could the inhabitants of Hungary catch fishes without devices, using only their hands, because of this abundance (*Szamota 1891*, 303–303). This description stands in contradiction with the data of those Hungarian chapters, which refer on existence of communities charged with fishing from the early Árpádian Age onwards (*Györffy 1977*, 452–454; *Zolnay 1977*, 106–108). As the fish was an important form of meat on the table of the monks, the most part of the quoted references are donations of fishermen, or later fishing places to monasteries. Further, for the study of Medieval fishing a special kind of source are the representations of the coat-of-arms: as a sole example I refer to the coat-of-arms of Ferenc Eresztevényi (*fig. 5: 1*; *Zolnay 1977*, 110). He, the chief cook of the Hungarian king and German Emperor Sigismund (1367–1437), obtained in 1414 a coat-of-arms with the representations of a pike (*Esox lucius*), with two bunches of parsley on the edges of a spit, being roasted over a fire. (King and emperor Sigismund obviously loved to have a roasted pike with parsley on his table, prepared by his chief cook.) Also the ethnographical descriptions contain a lot of references on fishing, the oldest records are from the turn of the 18th–19th centuries (*Szilágyi 2001*, 104–145). From this database one can get grips not only for the usage of fishing tools and techniques, but one can obtain knowledge about the organisation of the process of fishing, and about the habits of specified types of fishes.

What reflects has the research theme of fishing in the archaeological material? A sceptical answer should be not much, as fishbone was found only on a part of the excavation of rural settlements. This is most likely the consequence of the fact, that the rescue excavation are regularly too big for the screening of the dug out soil. The rare data, collected by László Bartosiewicz, stress out the importance of the carp (*Cyprinus carpio*). As in the modern times, also in middle ages was the carp the most eaten sort of fish in the rural environment of Hungary. Another specific sort of fish was the sturgeon (*Huso huso*), which was coming yearly onwards on the Danube to put roe (*fig. 5: 2*). As this sort of a fish could grow to very hug dimensions its catching was a royal privilege from at least the 12th century, and a special type of royal servants were charged with this job (*Zolnay 1977*, 98–101). The remains of sturgeons are to their most part to be find close to the shore of the Danube, in the areas where we have written records of these people.

Not only the fish bones but also the fishing tools count as a rare type of findings in the settlement archaeology of Medieval Hungary. The biggest collection of fishing tools was put together by Kálmán Szabó in 1938. Since this publication only very few of artefacts of this type were published, to most part weights of fishing nets (*Szabó K. 1938*, 127–128). Perhaps a call to attention can amend this situation.

A new branch in the investigation of the biological environment brought also interesting results for the analysis of the connections between the inundation areas and the fishing. The team led by Pál Sümegi had executed a series of geological sampling in order to reconstruct the natural environment of the National Park of Bátorliget, in the inundation area of the river Kraszna (*fig. 6*). The analysis of the C14 dated sections had proved the execution of a large scale fieldwork on the turn of the 10th to 11th century, with a presumed aim of creating a fish pound (*Sümegi 2003*, 151–183). The abundance of fishes in the artificially deepen lake was proved with the mass of their remains, mainly the fish-scale in the drilled-out samples. Tough the investigations of Bátorliget are far from being finished, the collected data seem to throw a new light on the earliest stage of the formation of the special social stratum of servants charged with various agricultural activities, among others also with fishing.

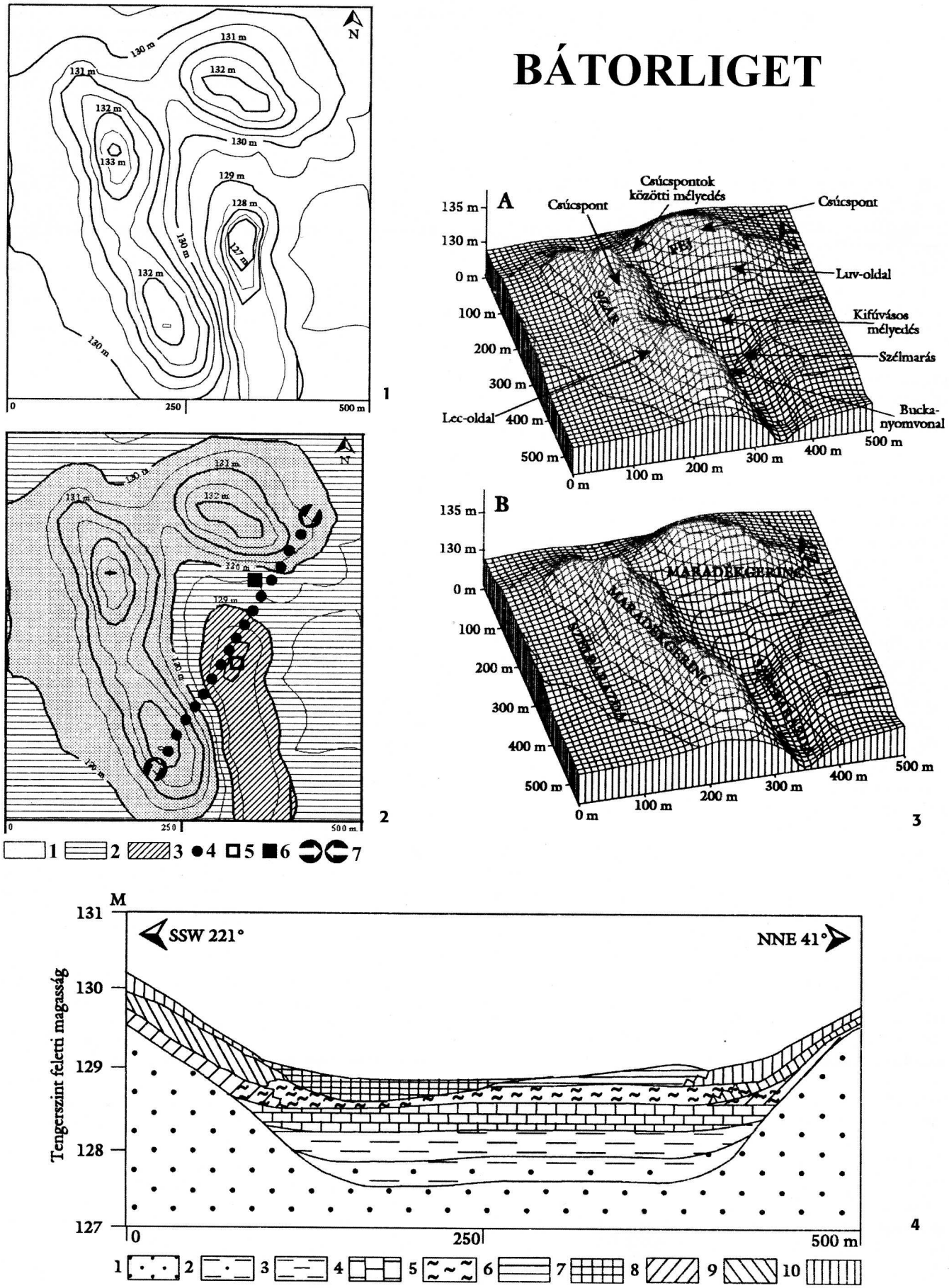

Fig. 6. *The geological section of the site of Bátorliget (after Sümegi 2003, 152–153, fig. 39–42).*

In the fourth, shortest section of my study I will present a problem, which is closely connected with rivers. Not with their inundation areas, but with the main course of the bigger rivers, and especially with the Danube itself. During the Middle Ages were the rivers of the Carpathian basin in a large scale used also as trading routes. An archaeological evidence for this is the so called Viennese potter, with German word *Schwarzhafnerware*, *Graphittonware*, which was produced in Lower Austria. There are several references in the literature, according to which these vessels were in use from the 13th century onwards (*Holl 1955*, 171–175; *1963*, 340–343; *1966*, 16–18). It is therefore to be stressed out with an accent, that, there are also earlier forms of this ceramics especially in Western Hungary (*Takács 1996b*, 186–187). These type of vessels were mainly used by the inhabitants of cities or bigger agglomerations, but there are some finding from the sites of rural settlements too (*Takács 1996b*, 153, fig. 6/8; *MRT 9*, Tab. 50/1, 7, 10). As all of these sites of rural character are in the western parts of Medieval Hungary, around the Danube, it can be no doubt in the fact that this river served as a trading route for the *Graphittonware* also earlier as this fact is mentioned in the written sources.

After we have became acquainted with the importance of inundation areas of Medieval Hungary let me drew some conclusions:

1. The works of Georges Duby and Jaques Le Goff had many brought proves to underline the importance of the forests in Western Europe of the Middle Ages. One can argue for the same importance of the marshes in the central parts of Medieval Hungary.
2. Although the marshy areas represent the most common element of the natural environment of the central parts of Medieval Hungary, the water was not exclusively obtained from the surfaces of fluent water courses or lakes. There are namely several excavations with traces of built wells.
3. The written sources, the graphical representations and ethnographical parallels prove the fact, that the fishing was a very important occupation in Medieval Hungary. The huge archaeological evidence dug in the past years underline this importance only partially. Maybe also because of the fact, that on the big rescue excavations the dug out soil of the archaeological features is regularly not screened.

Zusammenfassung

Es steht außer Frage, daß das Wasser für das Leben unentbehrlich ist. Deswegen forschte ich in meiner Studie nicht nach dem "warum", sondern nach dem "wodurch". Wegen des Reichtums des archäologischen Quellenmaterials konnte ich in meiner kurzen Studie nicht auf eine vollständige, sondern nur auf eine partielle Darstellung abzielen, mit einem Akzent auf die topographischen Besonderheiten der Lage der einzelnen Siedlungen. Aufgrund der Ergebnisse der Geländebegehungen, die als Programm "Archäologische Topographie Ungarns" schon fast dreißig Jahre von dem Archäologischen Institut der Ungarischen Akademie der Wissenschaften organisiert und durchgeführt werden (*MRT 1–10*), konnte ich die topographische Besonderheiten in zwei naturgeographisch sehr unterschiedlichen Umgebungen analysieren. Sowohl im sog. Plattensee-Hochland als auch in den zentralen Teilen der Tiefebene (ung. "Alföld") lagen die mittelalterlichen Siedlungsreste knapp am Rand von fließenden oder stehenden Gewässern bzw. ehemaligen Innundationsgebieten. Solche Lagen sind für jene Fundorten anzunehmen, die heutzutage nach den Flußregulierungsmaßnahmen schon mehrere Kilometer von den Flußbetten entfernt sind (siehe die topographische Karte des westungarischen Dorfes Lébény, *Abb. 4*). Die Wichtigkeit des Wassers kann auch mit der halbnomadisierenden Lebensweise der landnehmenden Ungarn (*Váczy 1958*, 291–329; *Szabó I. 1966*, 47–51; *Makkai 1975*; *Györffy 1977*, 397–425; *Földes 1983*, 327–349; *Takács 1998*, 187–191; *2000*, 157–191) unterstrichen werden (*Abb. 4*).

In dem zweiten kurzen Abschnitt meiner Studie hatte ich die Wassergewinnung innerhalb der ländlichen Siedlungen anhand einiger Beispiele analysiert. Obwohl fast alle ländlichen Siedlungen dicht neben Gewässer lagen, gibt es viele archäologische Beispiele dafür, daß diese Gewässer keine ausschließlichen Wasserquellen dieser Siedlungen darstellten. Die topographische Lage dieser Brunnen in der awarenzeitlichen Siedlung Lébény – Kaszás-domb suggeriert eine gemeinsame Benützung. Im Gegensatz zum benachbarten Lébény – Bille-domb, wo die Brunnen an der Spitze des Hügels vielleicht mit einem privaten Gebrauch gedeutet werden können. Auf dieselbe Interpretation weist die topographische Lage der Brunnen der spätmittelalterlichen Siedlung von Szentkirály, wo diese Anlagen hinter der Häusern nachgewießen worden sind.

In dem dritten bzw. vierten Abschnitt der Studie wurde die Rolle der Gewässer in der Ernährung bzw. in der Kommunikation dargestellt. Die archäolozoologische Analyse von László Bartosiewicz hat die Wichtigkeit des Fisches und besonders des Karpfen in der Ernährung der Bewohnern der mittelalterlichen ländlichen Siedlungen unterstrichen. Als ein neuer Zweig der Forschung sind die archäogeologische Untersuchung der Sumpfgebiete notierbar – so z.B. in Bátorliget (*Sümegi 2003*, 151–183), wo die Überreste des 10.–11. Jahrhunderts als die Überreste eines Fischteiches interpretiert wurden (*Abb. 5*). Ferner haben die archäologische Grabungen auch die Wichtigkeit der Donau als Handelsweg bewiesen (*Holl 1955*, 171–175; *1963*, 340–343; *1966*, 16–18, *Takács 1996b*, 186–187) durch die topograpsche Anordnung der wiener bzw. niederösterreichischen Schwarzhafnerware (= Graphittonware).

Aufgrund der dargestellten Ergebnisse können folgende Schlußfolgerungen formuliert werden:

1. Die Analysen von Georges Duby und Jaques le Goff haben viele Beweise für die große Bedeutung des Forstes in Westeuropa zusammengebracht. Man kann für die gleiche Bedeutung der Sumpfgebiete für die zentralen Teile des mittelalterlichen Ungarns annehmen.
2. Obwohl das Sumpfgebiet das häufigste Element in der natürlichen Umgebung im zentralen Teil des mittelalterlichen Ungarns darstellt, wurde das Wasser nicht nur aus den benachbarten fleißenden oder stehenden Gewässern gefördert. Es gibt nämlich mehrere archäologische Grabungen mit Überresten von Brunnen.
3. Die schriftlichen Quellen, die graphischen Darstellungen sowie die ethnographischen Parallelen liefern klare Beweise für die Bedeutung des Fischfangs im mittelalterlichen Ungarn. Die riesigen Notgrabungen der vergangenen Jahre lieferten hierzu nur wenig Belege. Vielleicht auch deswegen, weil die ausgegrabene Erde bei den Notgrabungen im Allgemeinen nicht gesiebt wurde.

Résumé

Il est bien connu que l'eau représente un élément inévitable pour la vie. Par conséquence notre communication n'a pas le but de vous démontrer les preuves de cette importance, mais de vous présenter de modes différents de son utilisation. À cause de l'abondance de sources archéologiques, je ne suis pas inspiré de démontrer la totalité des évidences au cours de mon exposé, mais seulement quelques traits caractéristiques. Le premier point de ma communication est l'emplacement topographique des sites ruraux. Les résultats des prospections exécutées par l'Institut

Archéologique de l'Académie des Sciences Hongroise – comme celle intitulée "Topographie Archéologique de la Hongrie" qui a durée pendant plus que trente années (*MRT 1–10*) – offre la possibilité d'une comparaison des régions de différents milieux naturels. Ainsi que dans la région montagneuse au Nord du lac Balaton et dans des régions centrales de la Grande Plaine Hongroise les traces des sites ruraux médiévaux ont été retrouvés strictement limitrophes aux surfaces des lacs ou aux traits des inondations des fleuves (*fig. 1–2*). Il est possible de faire les mêmes observations en cas des sites se trouvants aujourd'hui – après la régularisation des fleuves modernes – à plusiers kilomètres de distance d'un cours d'eau (cf. la carte topographique du village Lébény de l'Hongrie occidentale, *fig. 4*).

L'importance de l'eau dans l'environement rural de la Hongrie médiévale peut être aussi déduite de la mode de vie sémi-nomade des Hongrois conquérants (*Váczy 1958*, 291–329; *Szabó I. 1966*, 47–51; *Makkai 1975*; *Györffy 1977*, 397–425; *Földes 1983*, 327–349; *Takács 1998*, 187–191; *fig. 3*).

Dans la deuxième partie de ma communication courte j'ai essayé d'analyser – à l'aide de quelques exemples – l'extraction de l'eau dans des sites ruraux. Bien que presque tous les sites ruraux se trouvent à côté des surfaces de l'eau fluente ou stagnante, il y a quand même beaucoup d'exemples que ces surfaces ne représentent pas la source unique de l'extraction de l'eau. Le lieu topographique des puits du site de Lébény – Kaszás-domb, pendant la période de Khaganat Avare, indique une utilisation commune de ces puits. Contrairement au site adjacent de Lébény – Bille-domb où l'existence des puits au sommet de la colline peut être présumablement expliquée comme des sources de l'eau privées. Dans le cas du site médiéval de Szentkirály l'emplacement topographique des puits – qui sont retrouvés régulièrement derrière des maisons – fait allusion de la même interprétation.

La troisième et quatrième parties de ma communication sont dédiées à l'importance de l'eau comme source de nutrition et comme ligne de communication. Les analyses archéozoologiques de László Bartosiewicz ont démontrés l'importance de la pêche dans la nutrition des habitants des sites ruraux. Une direction nouvelle pour l'investigation de la pêche est celle d'investigation géologique des endroits inondés – par exemple celui de Bátorliget (*fig. 6*), où les exemples médiévaux ont été interprétés comme des traces d'un étang (*Sümegi 2003*, 151–183). Les excavations archéologiques ont aussi fait preuves de l'importance du Danube comme route commerciale. Les lieux de découverte de la céramique de la Basse-Autriche se trouvent en Hongrie occidentale, sur les bords du Danube (*Holl 1955*, 171–175; *Holl 1963*, 340–343; *1966*, 16–18, *Takács M. 1996b*, 186–187).

Après avoir fait la connaissance des données sur l'importance des zones d'inondation en Hongrie médiévale essayons-nous de faire quelques conclusions:

1. Selon les analyses de Georges Duby et Jacques le Goff il est bien connu que la forêt a été l'élément le plus important de l'environnement naturel de l'Europe occidentale. Nous pouvons bien y croire que le marais a eu la même importance en cas des régions centrales de la Hongrie médiévale que récemment.
2. Bien que les zones d'inondation représentent l'environnement naturel le plus répendu dans des parties centrales de la Hongrie médiévale, l'eau n'a pas été exclusivement obtenue à partir des surfaces ouvertes des eaux fluentes ou stagnantes. Il y a plusiers excavations avec des traces des puits creusés ou bien des puits bâtis de poutre. L'emplacement topographique de ces puits indique leur interprétation, selon laquelle une part de ces puits a eu un usage commun, tandis que les autres ont été probablement des puits privés.
3. Les sources écrites, les représentations graphiques et les parallèles ethnographiques signalent que la pêche a été une occupation très importante en Hongrie médiévale. Les retrouvailles archéologiques de la Hongrie médiévale ne reflètent cette importance que partiellement. Cela peut être aussi la cause pour laquelle au cours de grandes excavations archéologiques de sauvetage normalement personne ne tamise le sol exhumé.

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