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Rediscovering the old treasures of cartography – What an almost 500-year-old map can tell to a geoscientist

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The onset of the digital era has changed the value of the cartographic heritage at least in two senses: (a) the old maps in their digitized forms are easy to redistribute and since there is practically no copyright problem with them, they may appear in electronic databases and even in the internet (b) if the cartographic base is known or can be reconstructed, they can be integrated into geographic information systems (GIS).

Owing to this development more and more researchers recognize the value of such maps, since sometimes implicit information is also contained in them. The author could draw something evident on the map that today is by far not so obvious because the landscape has dramatically changed since then. To recognize such hidden information in the archive maps the researchers need to develop a certain routine, they have to be open-minded and they also need some luck.

With the increasingly widespread use of such historical maps, more and more information can be gathered concerning the environmental reconstructions. Of course, most of the archive maps cannot provide spatial accuracy that would be needed, but they are still a fair trade-off between the accuracy and the wanted historical information.

In geoscience 500 years in really a short moment, however, if one has a map that show environmental information of the situation a half thousand years ago (in other words, 0.5 ka or 0.0005 Ma) it is valuable, since the changes can turn to be considerable. 500 years is the time range that a geoscientist starts to consider interesting.

For the Pannonian basin, there is an almost 500-year-old map, the *Tabula Hungariae* (1528) compiled by Lazarus Secretarius and published by Tanstetter in Ingolstadt (Germany). This map is the first presenting a whole country in continental Europe. Although the map could not have been drawn according to modern cartographic principles, the approach of the compiler was consistent enough to provide a good overview and even some detailed information can be derived from its data content. The map was already analysed cartometrically by several authors, and in a few previous studies georeferencing attempts have also been carried out. The approximate rectification in recent coordinate systems paved the way to use it in quantitative studies.

In this contribution the focus is mainly on the paleohydrographic information that Tabula Hungariae may provide. At the time of its compilation, just two years after the combat at Mohács (1526) where the Turkish army have defeated the unified Hungarian forces, the military importance of the yet uncontrolled watercourses was extremely high. Therefore it is feasible to assume that the drainage network has been mapped with the highest precision available at that time. If we consider this assumption true, we can analyse the differences between the features drawn in the map and the actual hydrographical situation. These differences were mostly considered as errors previously; now we may consider some of them as indications of environmental change. Here only some examples can be mentioned grouped together according to feature types.

The most striking difference is the extent (or even existence) of a few lakes. There is a major lake around the city of Becskerek (today Zrenjanin, in Serbia) where there is no such a lake today at all. As it was recently pointed out, the unfortunate 2005 flood event in the region filled an area with similar extent reconstructing the lake temporarily. The extent of the Lake Balaton (the largest lake in Central Europe) has also a different shape in the than today. This fact is known: because of the low relief in the lake shore (primarily on the west), large regions were inundated due to the higher historical water level of the lake. The same applies to its counterpart more to the NW: the shape of the Lake Neusiedl (Fertő-tó in Hungarian) seems to be different to the present one. Most probably this difference can be accounted for the varying lake level, too. In the last century there is evidence for strong lake level undulations (including the dry state of the lake as well).

There are some observations concerning the fluvial pattern as well. As it was recently considered, the ‘erroneous’ course of the river Danube at the Danube Bend (north of Budapest) can also be partly attributed to the incision and fluvial evolution of the Danube. At other sections downstream there are further examples that can be considered as river avulsion and/or incision. Further, yet less studied differences in river size (assuming that the width in the drawing can be related to a certain order of magni-

tude of discharge) may also turn to be important in explaining a number of strange historical hydrological observations and settlement names.

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