

AQUINCUM

ANCIENT LANDSCAPE – ANCIENT TOWN

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Foreword

Geomorphological-paleoenvironmental studies to support archaeological excavations and investigations can be considered a new trend of research within the broad spectrum of studies dealing with environment and geomorphology. By publishing the latest results of investigations of this kind carried out on the territory of Aquincum and in its wider surroundings this book may rightfully reckon on the interest of both professional circles and the reading public.

Therefore we must welcome the publication of a volume of somewhat unusual character which was completed as a result of the collaboration of two important branches of studies, both having cherished traditions. The publication of this book was made possible by the close cooperation of two prominent institutes representing the above disciplines in Hungary: Geographical Institute of Research Centre of Astronomy and Earth Sciences, Hungarian Academy of Sciences (RCAES HAS) and Aquincum Museum of the Historical Museum of Budapest (BTM).

Geomorphology (a study of landforms and the processes that shape them) is an important branch within physical geography. With its potentials it has helped detect the characteristics of geographic conditions during the specific historical period when the antique culture flourished in Aquincum and in its neighbourhood. Remains from this age were investigated within their natural-ecological environmental context. Comparing the chronological frames of geomorphology and archaeology it is clear that geomorphology deals with evolution and transformation of the environment of the given area over a considerably longer period by presenting an overall survey of the geological history of the last approx. 10,000 years (Holocene), while archaeology deals with a shorter period of human history.

The archaeological, topographical investigations of several decades have accumulated a vast knowledge on the remains of cultures preceding the Roman Period, on the activities of the Romans aimed at the transformation of the landscape based on their technological achievements, and we could admire their highly advanced architectural monuments. These studies promoted to clear up the living conditions and

cultural characteristics of peoples having lived in Aquincum.

As for the area studied several intriguing questions were formulated. E.g. what kinds of settlement environmental endowments had made possible the emergence of Aquincum? What kinds of settling factors motivated the growth and areal expansion of the ancient town and its relation to the environment? How could be characterised the physical geographical environment during the Roman Period? Whether the topographic conditions were suitable for human settlement? Whether the space available was sufficient for the establishment of the military settlement and Civil Town and did it provide for their expansion? Had the steadily changing landscape along the Danube any influence on construction works in Aquincum? Apart from factors important for the foundation of Aquincum what kinds of natural events (e.g. disastrous floods) had an effect on the life of the settlement and on the selection of the place to accommodate its most important buildings (e.g. the Governor's palace) or provoked their abandonment.

In the present volume attempts will be made to answer all of these questions. We are to present that in Aquincum and in its neighbourhood Roman remains came to light from terrace surfaces, flood-free islands above the swamps, ox-bow lakes or river branches. Waterlogged, swampy places were suitable for settlement only with severe restriction, however, they could have an important strategic role e.g. in defense.

During our studies we tried to clear up the role of those factors of nature which had affected the development of the settlement structure of the Roman Period. Romans had a special ability to realize advantages provided by geomorphological conditions and they skillfully used water, different surfaces of flood-plain relief and rocks for their purposes.

In our studies the main emphasis was put on the introduction into landform evolution and morphological types as well as on the presentation of the natural-ecological characteristics of the fluvial plain, a landscape in constant change. Already at the beginning of our studies it had to be realized that the geomorphology of the area

and the formation of the main types of relief had been determined first of all by processes which took place at the end of the Tertiary and during the Quaternary. Abundant information could be drawn on the rate of formation of characteristic geomorphological levels by observing the position of freshwater limestone horizons. The structure and geomorphological characteristics of the relief were represented in thematic maps.

The geomorphological map of Aquincum and its neighbourhood has a prominent professional prestige all the more because earlier only one similar map was published on this area as a supplement to the 1st volume of the History of Budapest (T. NAGY 1973)¹ which, however, represented the relief conditions and the drainage network rather schematically. (At the same time that map was different for it was conceived to show archaeological sites and demonstrate their main topographic relations for the whole territory of Budapest, from Prehistory until the Migration Period.)

Besides the presentation of soils, climate and quasi-natural vegetation a paleohydrographic reconstruction was also attempted. Our detailed analyses and geological profiles made in the area, furthermore the paleohydrographic map compiled using the borehole data provided information on the paleogeographic conditions of Aquincum in the 1st through 3rd centuries AD. A special difficulty of the task was that the paleoenvironmental conditions had to be established for a geologically very short period and with possible maximum accuracy.

The geomorphological chapters and the paleohydrographic maps are based on the studies which were made in the Geographical Institute of HAS. Furthermore the previous and latest results of the most important geological, geomorphological, hydrological and pedological surveys on the subject were used, published by László Alföldi, Nándor Bacsó, Mrs. T. Fodor, László Góczán, András Grynaeus, Henrik Horusitzky, Ágoston Juhász, Árpád Lorberer, Márton Pécsi, Gyula Scheuer, Ferenc Schweitzer, Pál Stefanovits, József Szabó, Jenő Szilárd, György Wein and Bálint Zólyomi.

The archaeological maps of the book represent certain segments of 2nd and 3rd centuries AD Aquincum with greater details. It was the flourishing period of the town. The time span

was reduced because during the four centuries of the Roman rule the settlement pattern of Aquincum altered several times and important changes took place concerning the land use in the different parts of the settlement. Buildings were remodelled, outer and inner floor levels were raised considerably by levelling during reconstructions following the wars. Otherwise the representation of these different periods could be possible only by a series of separate maps. In addition at present the standard of investigations and interpretation of the results with regard to the different times of the Roman Period vary considerably.

Our intention was to deal with information regarding phases not represented in the maps as well as to tackle physical geographical processes and phenomena which were observed during archaeological investigations together with the related problems (e.g. whether the former Kis Island at Óbuda, which today is the southwestern tongue of the Óbudai Island, was actually an island in the Roman Period or not) and we changed our original concept accordingly and extended the text referring to these issues considerably.

In the reconstruction of the topographic conditions of the Roman Period we used the following method to involve archaeological data. As the investigations have been carried out in the area since the 19th century today we have nearly thousand localities to work with. From them those with accurate geodetic data were chosen. That is why the data of archaeological excavations made since 1969, having been surveyed according to a uniform geodetic concept including also the absolute data on levels are considered to be more important. Now it is already an essential condition of up-to-date studies. From the 90s of the last century on excavations were and are made mostly related to investments and they are financed by the business establishments interested. These excavations were made within the framework of a project started by the Aquincum Museum aimed at the study of the Roman Period settlement structure of Budapest. On the basis of data collected according to a uniform scientific concept there was an attempt to reconstruct the geography of the area as well.

The starting point of the representation of the settlement structure was the geodetic adjustment of smaller units. Certain areas (e.g.

¹ The map was compiled by Tibor Nagy and Ernő Nagy.

Budaújlak–Felhévíz, and portions of the military settlement and Civil Town that hitherto had not been investigated) where completely new archaeological results were obtained, as a first step were mapped at a scale of 1:200.

The next step was to select those objects on the sheets of the 1:1,000 scale geodetic summary maps which were then traced onto the geomorphological map. Its scale made possible the linear representation of only the largest, extensive features (roads, aqueducts, walls of the military camps, city walls). Other features (e.g. the most important excavated buildings of the military town, villas, springs etc.) we denoted with symbols. For the reconstruction of relief conditions first of all there were used the data of levels of Roman roads connecting parts of the settlement or avoiding them.

As the result of levellings the inner roads of the legionary camp and those of the Civil Town – within a given construction phase – can be regarded more or less horizontal. The inner floors of the buildings as a rule do not provide information on the original ground level. The most important altitude data were shown on the maps representing the Roman Period settlement pattern.

In the archaeological chapters a historical introduction is followed by the description of Roman Period settlement units proceeding from the north to the south. With the description of different neighbourhoods we wanted to emphasize the role of geographic factors and to underline changes in the land use over the centuries of the Roman rule. Due to their importance the results of studies made on the road network are summarized in a separate chapter. During archaeological excavations we had the opportunity to closely observe geological, geographical and other natural phenomena at several places. Because of the importance of these observations a short review is given on them, completed by detail-drawings and photos. A short summary of the most important Roman constructions and features related to the exploitation of natural resources as well as of marks of activities aimed at transformation of the environment can be found in separate chapters.

The scale of the key map did not allow the representation of all information judged essential (e.g. wells, altitude of levels), therefore we certain Roman Period settlement units were shown at a larger scale.

On the last figure of this book the most important archaeological localities of recent excavations are represented in a map against the background with the present network of streets. Places of earlier excavations in the legionary camp of Aquincum, in the Civil Town and in the military settlement are not represented on this figure. The volume summarizing the archaeological investigations made between 1969 and 2002 (FORSCHUNGEN 2003) includes their detailed description.

The adequate representation of geodetic level data and references to them caused several problems. One of the difficulties was that the two branches of studies tend to give altitude data above sea-level in a different way. In geographic studies absolute altitude is calculated from the level of the Baltic Sea (m aB) while in archaeology the level of the Adriatic Sea (m aA) is used. Therefore in the text and on the figures the calculation method was left intact that was used by the actual subject. The concordance table in the Appendix helps the reader to bridge over this contradiction. In the archaeological text it was inevitable to use Latin words, phrases and archaeological terms. Their explanation can be found in the List of names and terms. The collection of data was completed decisively before 2003, the results of excavations and investigations made after this term usually could not be represented in maps. They are mentioned, however, either in references in the text or in the notes. The most important ones of them are included also in the bibliography.

Regular geo-archaeopedological and malacological investigations at the excavations of the Aquincum Museum had been started since then (MINDSZENTY – HORVÁTH 2003, MINDSZENTY – HORVÁTH – KROLOPP 2006, SCHWEITZER – VICZIÁN 2009). The most important results of these investigations can be found in the reports on archaeological excavations which are published in the annals of the museum, entitled *Aquincumi Füzetek*.

It should be emphasized that this volume summarizes the work of not only those who are the authors of its chapters, but it is the result of the contribution made by generations of archaeologists over several decades. Their partial results, summarized works, meant a contribution of essential importance to the completion of this book. Here we mention only those scholars whose activity was the most important concern-

ing the Roman Period topography of Aquincum: Bálint Kuzsinszky, Lajos Nagy, András Graf, Melinda Kaba, Tibor Nagy, Klára Póczy, Aladár Radnóti, János Szilágyi, István Wellner. There were also used the results of investigations achieved by Júlia Altmann, Ágnes B. Tóth, Mrs. V. Bertalan, Patrice Bertin, Katalin Debitzky, Judit Gádor, Anita Kirchhof, László Kocsis, Gábor Lassányi, Erzsébet Máriy, Dorottya B. Nyékhelyi, Györgyi Parragi, Andrea Pölös, Judit Topál and Péter Vámos.

Geodetic surveys were carried out by György Busi, István Forgách, Pál Héjjas, Ferenc Kalah, Antal Kiss, Tibor Kovács, Ferenc Noéh, Gyula Simonyi, Mrs. A. Szesztai, Mrs. A. Vándor. The archaeological drawings were made by Mrs. P. Czirják, Erzsébet Csernus, László Illés, Péter Szökrön, Mrs. P. Szökrön, computer graphics were prepared by Krisztián Kolozsvári and most of the photos were taken by Péter Komjáthy and Ilona Molnár. Alexandra Nagy participated in the compilation of the volume.

The work of the authors of the geomorphological chapters was added by János Balogh, who made an important contribution to this part of the volume with the compilation of several thematic maps. Thanks are due to Anikó Kovács, Margit Molnár and József Szeberényi for the careful computer compilation of maps and figures,



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