

## INTRODUCTION

It was 84 years ago, in 1915 that the first volume of *Geologica Hungarica* was published as a "Bulletin for the acquaintance of geology and paleontology of the Hungarian Empire". The aim of its authors and editors (formulated in German) is valid up to the present: "Publication in close translation of summing up works in foreign languages in order to make the results of our activities understood and taken into consideration all over the world." 76 volumes of the series have since appeared more or less regularly. Since 1928 paleontological descriptions and studies have been separately published in Series *Palaeontologica* and geological monographs have appeared in Series *Geologica*. 53 volumes of Series *Palaeontologica* have been published, the last one came out in 1992. 23 volumes of Series *Geologica* have come out since that time, the last one was published in 1986.

Since to be founded in 1896 the early nineties of this century resulted to be one of the most conflictive periods of our Institute. Radical changes in profile, organization and reduction of staff have occurred. After that painful transformation our Institute became a modern, capable survey ready to face the challenges of the new century. In our new publishing strategy the two Series of *Geologica Hungarica* are destined to bring out the most outstanding scientific results of our activity in form of both articles or monographs.

Tradition and renewal are the keywords of this series restarted now at the turn of the century. The rich heritage of our past is preserved and taken care of, we rely on it and take courage from it. The new challenges of the changing and more and more globalising environment are continuously testing our readiness and ability for renewal. Is it possible to preserve the capacity of the Earth to maintain mankind? Can we balance the use of natural resources available to us? Are we ready to protect and rehabilitate the state and values of our environment? As geologists, our responsibility is increased because we know it very well that the geological environment is a determining factor of our existence. We know that in this environment irreversible harmful processes have already been generated from time to time measurable even in our individual lifetime. The recognition of these facts and the formulation of new answers are not enough in themselves. Our permanent aim is to help society to recognise these facts and accept the conclusions.

This volume summarises the results of investigations carried out by Hungarian and American researchers in the period 1994–1998. During the last decade the US–Hungarian Joint Fund as the only supporter of common geological investigations helped a lot in the realisation of the projects of the Geological Institute of Hungary (MÁFI) and it helped to gain new experiences to the United States Geological Survey (USGS) scientists. But this is the first occasion that the results of these common researches by Hungarian (MÁFI) and American (USGS) co-authors appear collected in the *Geologica Hungarica* reflecting the ideas of the editors who started the Series. This collection of papers contains the results of two projects. One is Joint Fund No. 415 project: "Deposit modeling, assessment of mineral resources and mining-induced environmental risks" (1994–1998), and the other is JFNo. 435 project: "Potential for Carlin-type gold deposit in Hungary" (1995–1998).

The leaders of the project "Deposit modeling, assessment of mineral resources and mining-induced environmental risks" were László ÓDOR and Richard B. MCCAMMON. Hungarian participants and USGS counterpart scientists were: György CSIRIK, Éva VETŐ-ÁKOS, Byron R. BERGER, Lawrence J. DREW, Richard B. WANTY and Walter J. BAWIEC. Co-authors of the contributions were: István HORVÁTH, Ubul FÜGEDI, László KÖRPÁS, János KISS, Sándor RÓZSAVÖLGYI, W. David MENZIE, Geoffrey S. PLUMLEE, Donald A. SINGER and David M. SUTPHIN. A wide range of geologic, petrographic and mineralogic data were used to prepare mineral deposit models. A pilot mineral-resource assessment for a study area in north-central Hungary was used to transfer the assessment

methodology from the USGS to the MÁFI. Environmental effects of old and recent mining activities were investigated using the new concepts of geoenvironmental models.

Leaders of the other project: "Potential for Carlin-type gold deposit in Hungary" were László KORPÁS and Albert H. HOFSTRA. Hungarian participants and USGS counterpart scientists were: László ÓDOR, István HORVÁTH, János HAAS, György CSIRIK and Joel S. LEVENTHAL. Co-authors of the contributions were: Éva BERTALAN, Géza HÁMOR, Tibor ZELENKA, Imre CSALAGOVITS, András BARTHA, William D. CHRISTIANSEN and Craig A. JOHNSON. The analytical data were arranged in data bases by Sándor LAJTOS. The contributions are summarising how the experiences of the American researchers could be used and applied in the study of the potential of a so far unknown and not investigated type of mineralization in Hungary, that is the Carlin-type gold.

Finally I would like to express my thanks for the support of the US–Hungarian Science & Technology Joint Fund given to our investigations. Thanks are also due to the participants for their successful work. It is our belief that the publication in English of the results of these investigations promoted the geological knowledge of Hungary both here and abroad.

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