Acta Geologica Polonica, Vol. 52 (2002), No. 1, pp. I-II

Climate Changes – The Karst Record II
A second meeting on karst and palaeoclimatic reconstruction; Czech Republic, Poland and Slovakia, July 27 - August 9, 2000

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Investigation of natural processes and their dependence on climatic conditions enables us to understand relationships between them, and to use fossil records in palaeoclimatic studies. The climate-related (or climate-controlled) processes may provide records of past climatic changes. The more detailed the record, and the more we know about its relationship to particular climatic factors, the better is our chance of arriving at a reliable palaeoclimatic reconstruction. In such work, it is of basic importance to realise which types of data we possess, and which methods are available for their analysis. It is necessary to consider specific problems relating to the physicochemical methods used in obtaining palaeoclimatic data, the assumptions adopted, and the statistical analysis of the data obtained. Only then may the reconstructions derived from different data sources be comparable with one another, providing the possibility for synthesis.

Among the terrestrial sediments used for palaeoclimatic reconstructions, cave deposits, mainly speleothems, are often cited. This type of cave deposit has fascinated people for a long time. The description of the diverse speleothem forms were one of the earliest items of scientific information obtained from caves. The possibility of drawing valuable information on the depositional environment, based on the analysis of calcite (the main constituent of speleothem), was pointed out quite early. At the moment of speleothem crystallisation, various trace elements are incorporated in the crystal lattice, and/or are fixed onto grain surface. These trace elements can then be used to derive different types of information. Trace admixtures of uranium isotopes, and of Carbon-14, enable us to date the moment of speleothem crystallisation. The idea of regular meetings of people who work with karst deposits and palaeoclimatic reconstructions was born ca. 5 years ago. As a result, the first meeting "Climate Changes – the Karst Record" was held in August, 1996 in Bergen (Norway). The purpose of these symposiums is to focus upon climate-related aspects of karst.

The second meeting "Climate Changes – The Karst Record II" was held in the territory of the Czech Republic, Poland and Slovakia, between 27th July and 9th August, 2000. As the first part of the conference, a 4-day scientific field trip was organised to the classic area of the Moravian Karst. After the conference in Kraków, a 5-day scientific excursion was organised to the Tatra and Low Tatra Mountain karst area, including a visit to the famous Demanovska Cave system. Topics observed during the field trip are discussed in the published guide book.

The main topics of the scientific programme were divided into six thematic sessions:

Palaeoclimatology,
Karst evolution,
Karst modelling,
Sedimentology and palaeontology of karst deposits,
Palaeokarst,
dating methods.

The present volume assembles some of the papers that were submitted to the organizing committee of the meeting.

While apparently heterogenous in the volume, approach, and methods employed, all of these papers are concerned with karst research and the application of the results to the interpretation of the palaeoclimatology and geology of karst areas.

The first group of papers (DREYBRODT & GABROVSEK, BAUER & *al*., and BIRK & *al*.) shows the possibility of gaining palaeoclimatic information from karst modelling.

The principles of isotope methods used for speleothem analysis, and the related problems, are discussed in the next two papers (HERCMAN & GOSLAR, FORD). Applications of isotope analysis of speleothems and karst sediments to palaeoclimatic reconstructions and the evolution of karst systems are presented in the next group of papers (ABEL & *al*., KEMPE & *al*., DOBROWOLSKI & *al*.).

Karst clastic sediments as a palaeoclimatic archive is presented in the next two papers (MADEYSKA & CYREK, MIROSŁAW-GRABOWSKA). The last two papers present other karst problems – the genesis of anastomoses (CALIC-LJUBOJEVIC), and the dependence of karst aquifers on atmospheric conditions (BARCZYK & *al*.).

The papers published in this volume cover only a part of the problems presented at the time of conference "Climate Changes – the Karst record II". It was a stimulating meeting, revealing many possibilities for the reconstruction of past climate changes in the karst environment.