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EDITORIAL

Introductory Editorial: Thematic issue: "Utilization of Thermal and Mineral Waters"

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This special thematic issue contains selected presentations from the 2012 yearly meeting of the International Association of Hydrogeologists (IAH) Commission on Mineral and Thermal Waters (CMTW). The meeting and long-established framework of a field trip in conjunction with it was held 12–18 August 2015, in Budapest and several other Hungarian locales.

Main topics of the meeting were Groundwater, Thermal and Mineral water in karstic terrains and porous sedimentary basins, and Utilization of thermal and mineral waters. The Headquarters of the Hungarian Academy of Sciences in Budapest was the location for a day-long series of nine presentations covering three main topics:

(1) Possibilities and limitations of thermal waters for use in production of energy. Presenters provided an overview on the status and hydrogeological background of this topic in Switzerland and in Hungary and on the compilation of atlases of geothermal waters and energy resources in Poland.
(2) Overview of balneological use of thermal waters. Presentations focused on operating thermal spas and their utilization for medical purposes in Poland and in Hungary.
(3) Introduction to the hydrogeological aspects of natural mineral and medicinal waters. Presenters covered these topics and the bottled water market in Australia, Russia, Poland, and Hungary.
(4) The final presentation was an introduction to the Buda thermal karst water system including origin, recharge, and age of groundwater.

The following day, participants visited several places in Budapest where thermal water is utilized for such purposes as recreation, balneology, and heating.

On successive days, attendees participated in a field trip to thermal and mineral water springs representative of those discussed in the presentations. Information about the hydrogeology of the places visited was delivered on the spot and/or at the local accommodations by hydrogeologists familiar with the area.

As an example of recent developments in Hungary, participants visited the small town of Veresegyház where all public facilities are heated by thermal water of 64 °C. Water infiltrated 22,300 years ago and is exploited from a 1460-m deep well. The same well is used to supply a local thermal spa in the summer when the heating system does not operate.

The natural lake of Héviz, an excellent recreation and medical center in Western Hungary, is fed by 35,000 m^3/day of ascending thermal water of 38 °C temperature. Local experts reviewed the origin and recharge conditions of this thermal karst water. They reported on the negative effects of bauxite mining on the recharge area of the lake which caused karst water levels to decrease. Fortunately, mining activity ceased in 1991, in favor of the lake, thus allowing water levels over the last 21 years to return to the original level.

Theodora spring is the oldest known mineral water in Hungary and has been documented since Roman times. The spring and the bottling factory in Kékkút were visited.

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A travertine hill (the Hungarian Pamukkale) deposited by the oversaturated thermal karst water of 65 °C, outflowing from a 400-m deep well, and the thermal spa resulting therefrom was visited in Egerszalók.

Thermal spas in Eger city were developed in the sixteenth century during the Turkish occupation. Experts of the local medical center and spa gave presentations on the hydrogeology and medical properties of thermal springs and wells supplying the spa.

Thermal Cave Spa (32 °C) of Miskolctapolca is known worldwide as a unique recreation center supplied with karst water by a spring containing a mixture of the old, warm water, and of fresh groundwater.

The last stop of the scientific field trip was Hajdúszoboszló—one of the greatest Balneology Centers of Europe. Although the origin and recharge of the 60 °C thermal water exploited from the porous Pannonian aquifer has not been established, one of the hypotheses was presented by local experts.

Six papers compose this thematic issue of Environmental Earth Sciences. These papers concern various aspects of hydrogeology and hydrogeochemistry of mineral and thermal waters in the authors' respective countries. Two papers are devoted to thermal waters in Poland. Three papers deal with different problems related to thermal water utilization in Hungary. One paper deals with a very special kind of water, dehydration water in the Central Carpathian Synclinorium, SE Poland.