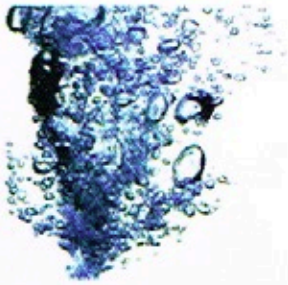
MinWat2014

International Multidisciplinary Conference on

Mineral Waters

Genesis, Exploitation, Protection and Valorisation

Karlovy Vary (Carlsbad), Czech Republic, 8-11 September 2014



International Multidisciplinary Conference on

MINERAL WATERS: Genesis, Exploitation, Protection and Valorisation

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VOLUME OF ABSTRACTS

Conference jointly convened by

- *International Association of Hydrogeologists (IAH).IAH Commission on Mineral and Thermal Waters*
- *IAH National Chapter of Czech Republic*
- *Faculty of Science, Charles University, Prague, Czech Republic*
- *T. G. Masaryk Water Research Institute (VÚV), Prague, Czech Republic*

Edited by
Zbyněk **Hrkal** and Karel **Kovar**

The abstracts in this volume were submitted to the MinWat2014 conference. This volume contains only those abstracts that are expected to be actually presented at the conference. The Editors and the Organizing Committee take no responsibility for any error and omission or for the opinions of the authors.

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KARLOVARSKÉ MINERÁLNÍ VODY

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COMPANY **PROFILE**

Karlovarské minerální vody, a.s. (KMV) is the largest producer of mineral and spring water in the Czech Republic. The company was founded in 1873 by Heinrich Mattoni, a native of Karlovy Vary with Italian roots. However, it acquired its present-day form only in the 1990s thanks to considerable investments of its new owners – the Pasquale family from Italy.

At present, the KMV Group fills and bottles mineral and spring water under the Mattoni, Magnesia, Aquila, Poděbradka and Dobrá voda brands; and exports them to 20 countries worldwide. It also distributes Yo, Granini, Schweppes, and Dr Pepper trademark products. The company extensively participates in the cultural, sports, and social life in the Czech Republic. In addition, it supports projects aimed at environmental protection and ecological issues.

KMV is committed to creating world-renowned brands with a distinctive image that contribute to increasing the quality and culture of beverage consumption in the Czech Republic and beyond. The professional approach of the company and its employees to product quality has been recognized by numerous awards, as well as by the fact that Mattoni became the official water during the Czech Presidency of the EU Council.

PRODUCT **PORTFOLIO**

176
kinds of beverages

Mineral water from the virgin nature around Karlovy Vary with a well-balanced mineral content.

Unique mineral water rich in natural magnesium with a low sodium content.

Spring water from the pristine natural countryside around Karlovy Vary.

Natural, slightly mineralized water with the lightest minerals.

Natural acidulous mineral water with a distinct delicate flavor and beneficial effects for the human body.

Yo sirups with a high fruit content and free of preservatives bring a one-of-a-kind enjoyment from fruit.

Granini juices guarantee the best experience that fruit can offer. Moreover, they are free of preservatives.

Soft-drinks with the bitter taste of quinine ideal alone or for mixed drinks during the day or in the evening.

A unique mixture of 23 flavors with a matchless taste. A soft-drink with a 125 year-long history.

SOCIAL **RESPONSIBILITY**

As we are aware of the importance of environmental protection, we support the development of approaches and technologies that lead to the best results in this field. What is our approach?

100% RECYCLABILITY

All the PET bottles that we produce can be reused for further processing. Including the bottle caps and the labels.

REDUCED PET VOLUME

When designing a new bottle, we consider not only its practicality and design but also its friendliness to the environment. That is why we have been continuously reducing the volume of plastics necessary for the production of our bottles.

WE STRIVE TO **IMPROVE**

We continuously reduce our impact on the environment. Over the past decade, for example, we have reduced our environmental impact by 20 percent in the case of Mattoni mineral water. We are able to do so thanks to innovations, savings, more effective energy use or transport by rail.

WE PROTECT OUR SOURCES

Drawing water from the depths of nature brings along with it the obligation to protect the surroundings of the source and the mineral water itself. Our mineral water sources are safe-guarded as a primary protection zone and are continuously monitored.

WE SET THE STANDARD

Karlovarské minerální vody, a.s. became one of the founding members of EKOKOM, markedly participating in the system of waste sorting and recycling in communities.

VOLUME OF ABSTRACTS (Z. Hrkal & K. Kovar, editors)

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There is a lack of evidence for Thalassotherapy after stroke. Better and larger studies are therefore required, but according to preliminary data of this study and other prior pilot studies, the scientific group will continue on this thematic area.

Abstract number 73 – A model for the origin of carbonated mineral waters of Central Victoria

SHUGG, A.
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Federation University, Victoria
Australia

In Central Victoria (Australia) carbonated mineral waters occur in fissure flow systems developed in consolidated Lower Palaeozoic rocks. The carbonated water type is one of several groundwater water types developed or that evolves in these rocks. Carbonated species appear to be associated with very low flux deep flow systems.
A model for the evolution of carbonated mineral waters is illustrated as an extension or adjunct of the evolution of high bicarbonate groundwater in extensive aquifer systems.
An explanation for the formation of the similar water type the sodium bicarbonate water facies in extensive aquifer systems involves a dynamic of cation exchange, clay mineral reaction and carbonate solution. The model suggested for the carbonated variant incorporates the role of natural acidulates that modulates of the pH in the flow system. Then as the mineral water ascends, mixes, evolves or discharges to the surface a change a change in pressure and in pH occurs. Bicarbonate, being a part of a diprotic acid dissociation continuum combined with the requirement for the maintenance of electro neutrality of the solution results in expulsion of carbon dioxide.
Typically the carbonated mineral water possesses a relatively low chloride concentration, a high iron concentration and is mildly acidic. Chemical differentiation between the deep low flow mineral water and the shallow groundwater can be marked, but evolution down the fissured flow systems may produce a convergence in water characteristics.
At mineral springs the nature of the ascending mineral water is often masked by near surface processes such as reflux, mixing and dilution by fresh water. These features have been identified during drilling. Delineation of fissure flow systems is based on the duopoly of water chemistry and rock mass structure, confirmed by deep hard rock gold mining activities.

Abstract number 74 – Drinking regime and mineral deficits – a myth or a serious problem?

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Distribution of body fluids
Total body water is the sum of the volumes in the individual body compartments, which in the stable condition of the patient possess an overall constant composition.
Disorder in sodium metabolism
An increase in sodium intake and its retention in the organism (increased storage of Na) does not result in hypernatraemia and hyperosmolality provided there is free access to liquids.