

Commission on Mineral and Thermal Waters

Commission Eaux Minérales et Thermales



MINUTES OF THE 43rd ANNUAL SESSION

8th to 13th September 2014, Carlovy Vary, Czech Republic

Together with

**MinWat 2014 – International Multidisciplinary Conference on
Mineral Waters Genesis, Exploitation, Protection and
Valorization.**

Carlovy Vary, 8 – 12 September, 2014

According to the decision of the CMTW-IAH Meeting 2012 in Budapest, Hungary, and 2013 in Perth, Australia and New Zealand (field session), **the meeting of the Commission on Mineral and Thermal Water IAH in 2014 was held in Carlovy Vary, Czech Republic.**

The meeting took place from September 8th to 13th, 2014, and was organized together with MinWat 2014 Conference.

The main organizer of the CMTW meeting was dr Tomas Vylita, a member of the Commission, and one of the main co-organizers of the MinWat 2014 Conference.

MinWat 2014 Conference Summary

MinWat2014 Conference was held under the auspices of the Ministry of Public Health of Czech Republic. 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 (Univerzita Karlova), Prague, Czech Republic
- T. G. Masaryk Water Research Institute (VÚV), Prague, Czech Republic

The conference was an opportunity for official or informal meetings of leading players in the field of mineral waters both from scientific and industrial sectors: hydrogeology and hydrogeochemistry (via IAH, IAHS and FH-DGG), water bottling (via EFBW), and balneology (via ISMH, FEMTEC and ESA).

Conference structure

The conference was divided into three thematic topics:

Theme A: Hydrogeology and hydrogeochemistry – origin, protection and management.

Theme B: Bottled water – market and demand, health issues.

Theme C: Balneology – balneotherapy and balneotechniques.

All presentations (themes A, B and C) during the entire conference were held in plenary way, i.e. in one lecture hall. The program during each day consisted of a number of presentation time blocks, each of these time blocks being devoted to a certain theme. At the beginning of each day – and at the beginning of most presentation time blocks – **introductory keynote lectures** were presented. The main objective of these keynote lectures was the presentation of typical problems existing in the fields of hydrogeology-hydrogeochemistry (theme A), bottled mineral water (theme B), and balneology (theme C). These introductory keynote lectures were intended also for colleagues from other disciplines. By doing so, the experts from, for example, water bottling and balneology learned about current issues in the field of hydrogeology and hydrogeochemistry, and vice versa. The invited keynote lectures (30 minutes) were followed by a series of **regular oral presentations** (15 or 20 minutes). Most presentations were from themes A and B. There was also possibility to present the work by means of **posters**.

Theme A: Hydrogeology and hydrogeochemistry – origin, protection and management.

Represented by the International Association of Hydrogeologists (IAH), the International Association of Hydrological Sciences (IAHS), and Fachsektion Hydrogeologie in der Deutschen Geologischen Gesellschaft Hydrogeology Section of the German Geological Society (FH-DGG).

Theme A included the following topics:

- A.1.** The interpretation of the term mineral waters and methods of their utilization in various countries.
- A.2.** Hydrogeological origin and hydrogeochemistry of mineral waters – Hydrogeological conceptual schemes of the structure and functioning of hydromineral systems – New ideas and opinions on the origin and specific types of mineral water (thermal, carbonate, radioactive waters, brines), evolution of mineral waters in different types of rock environment
- A.3.** Exploitation and management of mineral waters – Resource assessment and management, modelling of thermal and mineral hydrosystems, estimation of safe yield of mineral waters and quantity of heat stored in thermal water systems
- A.4.** Protection and conservation – Protection of existing mineral water resources, quality approach, risk assessment, quality protection policies
- A.5.** Abstraction and transport of mineral and thermal waters, technical problems (corrosion, transport, heat regeneration, hygiene issues, etc.)
- A.6.** Socio-economic aspects – Socio-economic benefits at the scale of springs, their watersheds and at the regional and national scale
- A.7.** Case studies on mineral water exploitation and protection – Scientific, technological, economic, social and legal issues

Theme B: Bottled water – market and demand, health issues.

Represented by the European Federation of Bottled Waters (EFBW)

Theme B included the following topics:

- B.1.** Challenges and opportunities of the European bottled water sector
- B.2.** The original (pristine) purity of natural mineral waters“– the legislation of the EU, as opposed to that of Czech Republic, does not specify the highest minimum required sensitivity of method detectable levels for chemical analysis methods used to establish the content of anthropogenic constituents, of which the consequence is that the gradual improvement of tools and methods leads to detection of some constituents undetectable before.
- B.3.** The analysis of contaminants at ultratrace level in water, and how to avoid ‘false positive’ results – Also the issue of emerging contaminants, and how to proceed for analyses with very low threshold
- B.4.** EU situation in relation to health claims: what can be claimed by mineral water brands based on EU legislation and recent work by European Food Safety Authority (EFSA)? – Mineral waters as part of food, and legislation on health and nutrition, for example (i) Commission regulation (EU) No 432/2012 of 16 May 2012 establishing a list of permitted health claims made on foods, other than those referring to the reduction of disease risk and to children’s

development and health, and (ii) Regulation (EC) No 1924/2006 of the European Parliament and of the Council of 20 December 2006 on nutrition and health claims made on foods

- B.5.** Safety of packaging: the issue of plastics (the safety of PET bottles)
- B.6.** Daily intake of mineral waters – links with (i) the definition of natural mineral waters, (ii) contents of natural mineral waters and their effect on health, and (iii) benefits of mineral waters over drinking water
- B.7.** Use of mineral waters for childrens nourishment (mineral waters suitable for preparation of baby food)
- B.8.** The issue of medicinal effect of bottled mineral waters (specifically highly mineralized waters). – Classification of these waters is not regulated by European legislation and therefore these waters are in some countries considered as food, and health supporting additives in other countries.
- B.9.** The issue of microbiological quality of natural mineral waters (as no water purification treatment by chlorination or similar method)
- B.10.** Containers (plastic, etc.) of bottled waters and their impact on the environment – Recycling
- B.11.** Bottled water in developing countries: Benefit for the whole population or 'stealing' water from the poor?

Theme C: Balneology – balneotherapy and balneotechniques.

Represented by the International Society of Medical Hydrology and Climatology (ISMH), World Federation of Hydrotherapy and Climatotherapy (FEMTEC), and the European Spas Association (ESA)

Theme C included the following topics:

- C.1.** Medical use of radon-rich mineral waters – locomotion apparatus diseases
- C.2.** Medical use of carbonated mineral waters – breathing apparatus diseases
- C.3.** Medical use of the sulphuric waters – skin diseases
- C.4.** Medical use of mineral waters in the field of gastroenterology
- C.5.** Treatment of neurological diseases
- C.6.** Treatment of metabolic disorders
- C.7.** Treatment of other diseases – dermatology and psychiatry
- C.8.** Use of mineral waters in the field of sports rehabilitation
- C.9.** Application of mineral waters for cosmetology

CMTW Meeting 2014 during the MinWat 204 Conference

The 43rd Meeting of the Commission on Mineral and Thermal Waters of the International Association of Hydrogeologists (CMTW-IAH) was held together with the MinWAt 2014 Conference.

CMTW Business Meetings in 2014:

10:30 – 12:30, 9.09.2014

15:00 – 17:00, 10.09.2014

CMTW field trip:

13.09.2014 – whole day; Organizer: Dr Tomas Vylita.

LIST OF PARTICIPANTS

No	Name	Country	e-mail
1	LAMOREAUX, JAMES (Chairman)	USA	jlamoreaux@pela.com
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ACCOMPANING PERSONS

No	Name	Country	
1	LaMoreaux, Nicole, Mrs	USA	field session & cultural program
2	Balderer, Christina, Mrs	CH	field session & cultural program
3	Susan Shugg	AU	field session & cultural program

ABSENT MEMBERS

Name	Country	Member / Cand. Memb.	Absent with apologies
DOWGIAŁŁO, JAN (hon. Chairman)	PL	M	* dowgian@yahoo.pl
KRALJ, PETER (hon. Chairman)	SLO	M	*
DEÁK, JÓZSEF	HU	M	* Deak47jozsef@gmail.com
FERU, ADRIAN	RO	M	*
POPESCU, MARIA	GR	M	
CARELLA, ROBERTO	IT	M	
RYBACH, LADISLAUS	CH	M	*
CALADO, Carlos	PT	M	
CRUZ, José Virgilio	PT	CM	
CUCHI, Antonio	ES	M	*
DOTSIKA, LIANA	GR	CM	
FRANCESCHI, Michel	FR	M	
FRICKE, Michael	FR	M	
HABERMEHL, Rien	AUS	M	
HERCH, Andrea	GER	M	
IBRAGIMOVA, Irada	AZN	M	
ISSAADI, Abderrahmane	ALG	M	
LAHERMO, Pertti. W.	FIN	M	
LAING, Colin	AUS	M	
LESMO, Renato	IT	M	
MELIORIS, Ladislav	SLO	M	
MOORE, JOHN	USA	M	
PANG, Zhonghe	CHINA	M	
POUCHAN, Pierre	FR	M	
ROSENTHAL, Eliahu	IS	M	
RISLER, JEAN J.	FR	M	
SCHNEIDER, Jean	AUS	M	
SHAWKI, Abdine	ET	M	
SHTEREV, KOSTADIN	BUL	M	
TAHLAWI, Mohamed Ragaie El	EGY	M	
VINOGRAD, NATALIA	RU	M	*
VERDEIL, Pierre	FR	M	
VON STORCH, KURT	GER	M	
ZUURDEG, Boudewijn	NL	M	

Scientific Lectures by CMTW Members during the MinWat 2014 Conference

8-Sep-2014	Lachassagne P. <i>(introductory key-note lecture; Theme A)</i>	FR	Guarantying the purity of Natural Mineral Water: the 20 years technical and socio-economic Evian experience conciliating collective responsibility for environment protection, and local development
8-Sep-2014	Fórizs I. <i>(introductory key-note lecture; Theme A)</i>	HU	The origin of Hungarian bottled mineral waters by environmental isotopes
9-Sep-2014	Balderer W. <i>(speaker, Theme A)</i>	CH	The Thermal spring of Bad Ragaz Switzerland: Characterisation of origin, chemical properties and observed variations of fluorescence spectra
10-Sep-2014	Lachassagne P. <i>(speaker, Theme A)</i>	FR	The need of a multidisciplinary approach for determining the structure and hydrogeochemical functioning of complex sparkling natural mineral water systems: a case study from southern France
10-Sep-2014	Balderer W. <i>(speaker, Theme A)</i>	CH	Isotopic investigation of the origin of ammonia and nitrate in the mineral spring waters of Scuol / Lower Engadine, South Eastern Switzerland
10-Sep-2014	Lachassagne P. <i>(speaker, Theme A)</i>	FR	Use of several environmental dating tracers with lumped parameter models for the understanding of complex natural mineral water systems (Evian, France, case study)
10-Sep-2014	Piscopo V. <i>(speaker, Theme A)</i>	IT	Mineral waters of Castellammare di Stabia (Southern Italy): a particular case of seawater intrusion in a carbonate aquifer
11-Sep-2014	Lachassagne P. <i>(speaker, Theme A)</i>	FR	Role of deep fractures and ancient weathering profiles in a hard rock sparkling natural mineral water hydrosystem
11-Sep-2014	Shugg A. <i>(speaker, Theme A)</i>	AU	A model for the origin of carbonated mineral waters of Central Victoria
11-Sep-2014	Marcin D. <i>(speaker, Theme A)</i>	SK	A new look at the hydrogeological structure of thermal waters in Piešťany Spa, Slovakia

Agenda / Points of Discussions

at the CMTW Meeting in 2014

International Interdisciplinary Conference on Mineral Waters Genesis,
Exploitation, Protection and Valorization - MinWat2014
8 – 11 September, Carlovy Vary, Czech Republic

CMTW Business Meeting in 2014:

10:30 – 12:30, 9.09.2014

15:00 – 17:00, 10.09.2014

1. Welcome of the participants and members: Jim LaMoreaux and Tomas Vylita
2. Acceptance of the CMTW Minutes from New Zealand, 2013: short info will be given by Andy Shugg or Jim LaMoreaux.
3. New information (update) from the IAH head office regarding evaluation of the CMTW: short info by Jim LaMoreaux
4. Information on the new CMTW web-site construction, development, management: Anna Wachowicz, Elżbieta Hałaj, Adam Porowski
5. Information / discussion about upcoming publications from CMTW meetings: Evian and Budapest: Jim LaMoreaux and Istvan Fórizs
6. New members: voting on the admission of Anna Wachowicz and Elżbieta Hałaj as full members of the CMTW: short info will be given by Secretary Adam Porowski.
7. Propositions of new members
8. Propositions of the next meetings: discussion, voting, decisions

Protocol (by Secretary A. Porowski)

Ad. 1.

The main organizer, Dr Tomas Vylita, gave a welcome speech and presented briefly the organizing and scientific committee at the MinWat Conference.

The chairman of the CMTW welcomed all the members, presented the meeting agenda and invited active discussion on the next points of the program.

Ad. 2.

The Minutes of Perth, Australia and Auckland, New Zealand meeting in 2013 was prepared by Dr Jim LaMoreaux, and Dr Andy Shugg, who deputized absent Secretary Dr Adam Porowski.

The Minutes were presented by the chairman Dr Jim LaMoreaux and accepted unanimously by all members.

Ad. 3.

The chairman of the CMTW presented updated information regarding the working groups of the IAH and requirements from the IAH authorities concerning better integration of working group members and development of joint activities. Also, the case of better integration in IAH activities was highlighted.

Ad. 4.

The secretary, Adam Porowski, presented the updated information about CMTW website development. The website construction team of three CMTW members was formed, namely: Anna Wachowska-Pyzik, Elżbieta Hałaj and Adam Porowski. The new website was completed and started in the free of charge server with the following address: <http://www.cmtw.c0.pl>

The process of moving the website to the official servers of the IAH was officially initiated. However, the response from the IAH authorities was very sluggish and the case is still in the process.

Ad. 5.

The chairman presented updated information concerning the latest and upcoming joint publications. First of the newly published book "Thermal and Mineral Waters: Origins, Properties and Applications" edited by W. Balderer, A., Porowski, H. Idris and J. LaMoreaux was presented for the CMTW members. The publication is regular book, 125 pages, published by Springer. The book concerns CMTW meeting in Cairo, Egypt, in 2009, organized by many-years member and vice-chair of the Commission dr Hussein Idris. He organized the CMTW meeting together with his 60-years activity in the field of hydrogeology. The book contains several papers presented at the scientific session in Cairo, Egypt.

Dr István Fórizs presented updated information about new special issue of Environmental Earth Sciences: the issue was almost ready; however two additional manuscripts were still in the process, due to difficulties in contact with authors. The new manuscripts were considered to replace those which were unable to proceed. The secretary, Adam Porowski, proposed to submit one of his papers and one of Dr Elena Kayukova to complete the special issue. This special issue also will combine best papers from CMTW meeting in Evian, 2011.

Dr Andy Shugg and Chairman Dr Jim LaMoreaux also presented updated information about next publication concerning the mineral and thermal water resources of New Zealand and the CMTW meeting in Rotorua, 2013. Andy Shugg will be the main editor of the upcoming publication. Due to a large material and data to combination the co-authors are seeking. The work is in the process.

Ad. 6.

Two young scientists (doctoral students) from AGH University Of Science and Technology, Kraków, Poland submit their applications for a full membership:

1. Anna Wachowicz-Pyzik
2. Elżbieta Hałaj

Their official CVs were sent to CMTW secretary who forwarded them to the chairman and vice-chairman.

The applicants were present at the CMTW meeting in Budapest, Hungary, 2012. Moreover, both are responsible for construction and maintenance of the new CMTW website.

The chairman and secretary presented the applicants for membership. Also, applicants were asked to make brief presentations about themselves, their scientific fields and their current research.

The CMTW members unanimously accepted Anna Wachowicz-Pyzik and Elżbieta Hałaj as new members of the CMTW.

Ad. 7.

Two new members were proposed for membership: Dr. Petar Papic, Professor of Geochemistry at Belgrade University and Mr. Kriang Pirarai, Senior Hydrogeologist with the Thailand Department of Ground Water Resources. Resumes for both were distributed. Dr. Papic was in attendance and Mr. Pirarai sent his regrets. They are to be considered at the next CMTW meeting to be held in concurrence with the IAH Congress in Rome in 2015.

Ad. 8.

Three propositions of next CMTW meetings were presented.

1. Proposition 2015: together with AQUA 2015 IAH Congress, Rome, Italy.
2. Proposition 2017: together with MinWat 2017 in Portugal.
3. Preliminary proposition 2018: Crimea Peninsula, Russia, main organizer: dr Elena Kayukova and Russian Chapter of IAH – still in the form of interesting future possibility due situation in Crimea.

Dr Vincenzo Piscopo presented detailed information about preliminary program of the AQUA 2015 Congress and very good opportunities for the IAH working group meetings.

The CMTW members accepted the proposition of Dr Piscopo. Additionally, the special field trip recommended for the CMTW members are going to be organized in the form of post-congress field trip.

Dr Jose Marques and Dr Paula Carreira, University of Lisbon, Portugal, presented preliminary proposition of organization of MinWat 2017 conference. They invited CMTW members to organize their meeting in 2017 together with this international conference. The Chairman of the Commission thanked for the proposition and accepted to put it into schedule as a possible place of next CMTW meeting.

