

Interview with Ing. Miroslav Olmer, one of the founders of groundwater zoning in the Czech Republic



Awarding of the Ota Hynie medal at the 14th hydrogeological congress in Liberec 2014 for significant and long-term contribution to Czech hydrogeology

Mr. Olmer, you started your university studies shortly after World War II. Can you tell us about this time from your personal experience and, also, why you chose civil engineering and water management?

I completed my secondary school studies in 1948 when, even at our Reformed Real Gymnasium (RRG) on Velvarská street, it became clear that further studies at university would be associated with certain difficulties. For admission, reviews were required not only from the school, but also from so-called action

committees, the Communist Party, and the like. Humanities universities were mainly affected by this, while technical ones were not affected so far.

My motivation was probably a liking for subjects with a distinctly logical basis, for example Latin, mathematics, and optional descriptive geometry, which I chose and then found very useful. Admission to the then University of Engineering Construction, later the Faculty of Engineering Construction, was relatively easier. And the fifth unit of water scouts, the so-called Pětka, certainly contributed to my choice.

Sometimes in life, coincidences decide; how was it in your case? Did you plan to work in research?

I didn't plan to work in research. After completing their studies, some started scientific postgraduate studies; their main aim was to avoid two years of military service. I didn't have this motivation, the scientific career didn't appeal to me at all – I wanted to be on the construction site, and a major obstacle would also be further study of Marxism, which I wouldn't be willing to undertake.

I entered the practice immediately according to the then compulsory placement document, namely at the national enterprise Vodní stavby in Sezimovo Ústí, which was quite a mistake. After a year, I managed to end the two-year commitment and turned to the then Vodohospodářské rozvojové středisko (VRS), where they offered me a position on the construction of Klíčava water reservoir as a construction supervisor. I worked there for two years and I like to remember it – the building was nice, I was my own boss there and, moreover, the working class was mostly made up of persecuted religious people.

Then the lingering effects of an injury from work practice after the third year caught up with me. After surgery on my right leg, I could no longer return to the construction site and transferred to a unit within the VRS, where I already knew it well and earned extra money there during the third year. I was somewhat limited in mobility, with a disability of 45 per cent, but I also got the desired exemption from military service.

And then it went on automatically. The VRS was purpose-built for preparation of the State Water Management Plan (SVP), to which experts from the WRI and the Water Management Office of the Ministry of Construction and Reclamation Department were transferred. My activities were focused on the sector of water supply to the population. After completion of the SVP, the department worked on development of water supply systems and the related survey of groundwater resources, which was then the seed of a later systematic hydrogeological survey and groundwater balance.

Through reorganization ups and downs, the VRS was gradually transformed from the Directorate of Water Streams – Directorate of Water Management Development, the Water Management Development and Construction, until finally, in 1976, the development section was transferred back to the WRI. So it came full circle and I became a "researcher". In connection with other changes after 1990, it was possible to separate the part dealing with groundwater from the development department, which was located in a building on Rohanský ostrov, the so-called "Rohaňák", and connect it with the hydrology department in Podbaba.

As far as we know, you have lived your whole life in Prague 6 – Dejvice. Has it also affected your profession?

Until I was about four years old, we lived in Švecova street, then nearby in Wuchterlova – later also Gneisenauova, Kujbyševova, etc. – near Dejvice railway station. Dejvice was a modern, pleasant neighbourhood; Dejvická street was a shopping street on Sundays, from where I used to bring a tray with pieces of cake from the confectioner Kotrbáček. Today there is a car park, the shops

have basically disappeared, replaced by banks and Russian goldsmiths, and on Sundays it is a ghost street. After 1955, I became married to Ořechovka, which was originally Prague XVIII, so also Prague 6.

My teenage years were quite turbulent. SS-Scharnhorst-Kaserne expelled us from the General Boys' School on Dürich Square in the fourth grade, and the Junkers-Werke from the RRG building on Velvarská street after the first year. If the place influenced me in any way, it was probably due to the fact that at the gymnasium in Velvarská I was lucky to have professor of mathematics, prof. Pažoutová, and Latin prof. Václav Čep (brother of the poet Jan Čep). Both of them led me to a fondness for logic, both in maths and Latin, subjects which some other teachers made unattractive for their students. And I must add that the property in Ořechovka made me a caretaker and a gardener.

Almost your entire working life is connected with regional survey and hydrogeological zoning. We are aware of the results of your research, but it is not completely known to public what long development this area went through until the current zoning from 2005.

We operated in the then system of centralized planning and management. Relations between individual workplaces were based more on personal contacts. This was the reason why the contacts between the sectors of water management and geology, regardless of the different departmental affiliations, were very good and close. On the basis of these relationships and the mentioned beginnings of the survey, an opportunity arose to start a regional hydrogeological survey, which was carried out continuously from 1965 until 1990, when it was concluded with the Synthesis of the Czech Cretaceous. There was no further continuation, i.e. the intended Synthesis of the Quaternary.

Twenty years of repeated and unsuccessful attempts to continue this work followed. It was only within the framework of financing from European Union funds that the possibility to continue arose in the form of the project „Rebalancing of groundwater supplies“, implemented under the leadership of the Czech Geological Survey (CGS) between 2010 and 2015/2016.

As a preparation for conducting a hydrogeological survey and keeping records of groundwater resources, the first hydrogeological zoning of Czechoslovakia was prepared in the 1960s under the editorship of the VRS original office, later updated in connection with the results of the surveys and changes in the administrative structure. The 2005 version was published in the *Sborník geologických věd (Proceedings of Geological Sciences)*, Series HIG, No. 23, 2006, where the update procedure is also described (see also *Podzemní voda ve vodoprávním řízení XV*, 2019).

It is worth mentioning the comparison of the processing and administration of individual versions, which I am attaching for your interest:

Updates were foreseen in the concept of zoning from the beginning. Since 2016, material documents have been available for updating the latest valid version at the end of the „Rebalancing of groundwater supplies“ project, but this has not yet happened.

ÚGÚ, ČGÚ – Ústřední/Český geologický úřad (Central/Czech Geological Office), MLVH – Ministerstvo lesního a vodního hospodářství (Ministry of Forestry and Water Management)

Version	Processing	Scale	Approved
1965	1962–1964	500,000	MZLVH a ÚGÚ, 1965
1973	1971–1973	200,000	MLVH a ČGÚ, 1973
1986	1984–1986	200,000	MLVH (SVP protocol), 1986
2005	2001–2005	digital	Decree No. 5/2011 Coll.

We last met at work during the „Rebalancing of groundwater supplies“ project, where you were one of the consultants for the Czech Geological Survey. How do you perceive this whole project and its results?

The Czech Geological Survey approached me to cooperate as a consultant, initially for part of the hydrological work in activities 2, 4, 6, and offered me good conditions for the entire duration of the project. Subsequently, collaboration has developed with RNDr. Renáta Kadlecová, the main researcher of the „Rebalancing of groundwater supplies“ project.

On the basis of experience from twenty-five years of regional surveys, control days were introduced, which were beneficial for mutual contact between the contracting authority and the researchers, although they repeatedly took place without the participation of representatives from the contracting parties, i.e. the State Environmental Fund, or the Ministry of the Environment and the Ministry of Agriculture.

The project was completed in 2015/2016 and the results of the assessment of groundwater resources were presented in a standardised form of so-called *Cover Sheets*, which replaced the already completely outdated outline according to Decree No. 369/2004 Coll. Their content essentially fulfills the original purpose of the task, i.e. the rebalancing of groundwater resources in selected important regions, and thus provides uniform data for their updating.

Can you think of some loved ones, colleagues, friends, and other people who influenced you a lot and meant a lot to you?

From my field, they are primarily Karel Zima, František Slepíčka, Stanislav Klír and Miroslav Kněžek. It was a certain advantage that we were not directly connected from an organizational point of view and thus were not bound to each other in certain respects.

Karel Zima drew attention to the close relationship between hydrogeological research and the practical use of groundwater resources. František Slepíčka dealt in detail with the manifestations of the underground component in the surface runoff. With Miroslav Kněžek, our relationship was rather specific; our common interest was groundwater, but with his point of view of a hydrologist, and my point of view based on water management. Our relationship went beyond professional cooperation and grew into a personal level. Stanislav Klír was the officer for hydrogeology at the Central Geological Office, and his contribution to the creation and organization of the regional hydrogeological survey is essential. He was an official, educated in the field, who did not hesitate

to accept decisions and bear responsibility for them. Again, our relationship was a little more than a working one.

What message would you like to convey to the current young generation of researchers?

I admire the young generation's technical equipment and wide use of modern technologies. But I would still like to remind you that groundwater is an integral part of the hydrological cycle, and thus of the natural environment. The landscape, its character, cannot be known and understood only from satellite images and records of automatic observation stations. You have to go through it and feel it; that's how everyone did it before – Smreker, Hynie, Podvolecký – whose insights we still value and they are irreplaceable.

It took quite a long time before, during the second half of the last century, it was possible to at least partially apply the opinion that surface water and groundwater systems are not separate and that groundwater does not only form the final part at the crossing line (Wundt, Natermann), but also 40 to 50 per cent of total runoff. Together with Miroslav Kněžek, we tried to promote this, and the work of František Slepíčka also made a significant contribution to this. It will probably take some time before the water management balance, which is still separate for surface water and groundwater, changes, even though mutual influence obviously occurs and the so-called conjunctive balance for certain territories is known and applicable.

And just as an afterthought – today's options for publishing and reproduction techniques are very wide, but they also have their limitations. They enable an almost overproduction of the volume of information – at the expense of more concise substantive expression.

Thank you very much for the interview and I wish you good health.

Ing. Anna Hrabánková
Head of the TGM WRI Department of Hydraulics, Hydrology and Hydrogeology

The interview was translated on the basis of the Czech original by Environmental Translation Ltd.

Ing. Miroslav Olmer

Ing. Miroslav Olmer, born 6 July 1929, is one of the founders of hydrogeological zoning in the Czech Republic. He graduated from the Czech Technical University, the University of Engineering Construction – Water Management (1948–1953), but at the same time he also studied English at the Faculty of Philosophy and postgraduate courses dedicated to contemporary philosophy, and later practical hydrogeology. In mid-1960s, he was the main researcher of the first hydrogeological zoning of Czechoslovakia (including Slovakia), and introduced the first detailed record of water supply sources of groundwater in important hydrogeological structures. At the beginning of the 1970s, a more detailed zoning on a scale of 1 : 200,000 was published again under his leadership, and at the same time work was started on the water management balance of the amount of groundwater. In connection with this, he began to put into practice hydrological methods of determining natural sources of groundwater. In the second half of the 1980s, he opposed part of the results of the Synthesis of the Czech Cretaceous – one of the most important hydrogeological surveys of that time – and at the same time, together with a team of authors, he published another hydrogeological zoning, this time clearly aimed at balancing the amount of groundwater. He designed and developed protected areas of natural water accumulation (CHOPAV), which still exist in our legislation today. After 1989, he devoted himself to the general issue of groundwater protection, both in terms of quantity and quality. He is the author of some concepts that were later incorporated into national legislation. Another initiative was the Hydrogeological Zoning of the Czech Republic in 2005, which became the basis for the delineation of groundwater bodies, as well as cooperation on the development of procedures for assessing the state of groundwater bodies, or his essential contribution to the most important hydrogeological project of the last decade „Rebalancing of groundwater supplies“ (2010–2016).

