

DR. OTTO BORNEMANN (1943–2010)

Michael SCHRAMM & Jörg HAMMER

Bundesanstalt für Geowissenschaften und Rohstoffe (BGR), Hanover

Otto Bornemann was born in 1943 in Benniehausen near Göttingen. After passing the Felix-Klein-Gymnasium in Göttingen, he decided to study civil engineering from 1966 to 1968 at the Technical University of Brunswick (Braunschweig), influenced by his father. Already during his time at high school and at university he discovered a deep interest in nature and especially in stones probably as well since he joined the scouts with great enthusiasm. In 1968 he changed the professional field to geology and finished his diploma and diploma thesis in 1973. Thereafter he decided to continue salt research by Prof. Wachendorf at Geological Institute of the Technical University of Brunswick and finished his doctoral thesis (“Development and internal structure of salt domes“) in 1979 at the University Brunswick. In 1976 a new episode of his work-life started with the employment at the Geological Survey of North Rhine Westphalia in Krefeld, in the field of geological exploration of the Ruhr coal mining district. With the beginning of the search for a nuclear waste storage place, he moved to Hannover to the Bundesanstalt für Geowissenschaften und Rohstoffe (BGR). He worked as a salt geologist at different sites for the storage (Gorleben, Morsleben, Asse) and later he was more responsible for all activities in Gorleben and became head of section “Geology of the barriers: salt, clay and granites” in the BGR. The exploration of the Gorleben salt dome was his “baby” and what hit him most was the moratorium, initiated by politics, to stop further exploration in 2000. He searched for other activities to use the salt knowledge and to improve methods so he intensified works in geological investigations of cavern fields and in solution mining (3D-modeling, Br-stratigraphy), being of great economic and scientific interest in Germany as well as in other European countries (Netherlands, Portugal and Poland) and at least worldwide. Especially his interest in the eastern part of the Zechstein basin as a well as the sympathy to Poland was the motivation for Otto to come to Poland. Already during his doctoral thesis work in Brunswick he got contact to Poland, because the room colleague came from Poland (Stanislaw Lorenc). In 2004 he contacted University of Poznan and then the connections quickly grow, for example Solino, the Polish Geological Institute in Warsaw, the Kłodawa Salt mine, as well as the participation in the International Salt Symposiums of Polish Salt Mining Society at several times followed. Many years of interesting work and friendly collaboration with Polish colleagues followed. At the end of his active time (end of 2007, at the age of 65) he had published many articles and had educated a lot of students. As he retired he left Hannover

and moved together with his family to Rüdénhausen, a little town in a beautiful landscape, about 20 km east of Würzburg, from where he intensively followed the actual developments in salt research and helped frequently with good advices. A great satisfaction he felt, as the moratorium ended in 2010 and the exploration of the Gorleben salt dome continued. With his sudden and unexpected death 28.9.2010 – he was only 67 years old – he left his wife and his daughter as well as many friends and colleagues in sorrow. Furthermore his death leaves a big gap in salt experience. We will keep him in mind as a friendly, sometimes authoritative, creative, helpful, capable, kindness and faithful colleague, who influenced to a great extent the salt geology as well as collaboration and friendship of Polish and German geologists.

SELECTED PUBLICATIONS

- Bornemann O., 1979. Das Gefügeinventar nordwestdeutscher Salzstrukturen in Abhängigkeit von ihrer halokinetischen Stellung. *Universitet Braunschweig, Dissertationen*. Braunschweig, 1–119.
- Bornemann O., 1982. Stratigraphie und Tektonik des Zechsteins im Salzstock Gorleben. *Zeitschrift für deutschen geologischen Gessellschaft*, Hannover, 133, 119–134.
- Bornemann O. & Fischbeck R., 1986. Ablaugung und Hutgesteinsbildung am Salzstock Gorleben. *Zeitschrift für deutschen geologischen Gessellschaft*, Hannover, 137, 71–83.
- Bornemann O., 1991. Zür Geologie des Salzstocks Gorleben nach den Bohrerergebnissen. *BfS-Schriften*, Salzgitter 4, 1–67.
- Bornemann O. & Mingerzahn G., 1995. Geologie und Hydrogeologie im Bereich der Schachtstandorte: Geologie im Hutgestein und Salinar der Schächte Gorleben. In: Jessberger H.L. (Ed.), *Gefrierschächte Gorleben*, Balkema, Rotterdam, 1 Auflage, 21–36.
- Bornemann O., Fischbeck R. & Bänderle G., 2000. Investigation of deformation textures of salt rock from various Zechstein units and their relationship to the formation of the salt diapirs in NW Germany. *8th World Salt Symposium, SALT 2000, Proceedings*, Elsevier, Amsterdam, 1, 89–94.
- Bornemann O., Mingerzahn G. & Behlau J., 2001. Characterisation of Sites for Salt Caverns in the Middle European Zechstein Salt Basin Using Exploration Experiences of the Gorleben Salt Dome. *Technical Meeting Papers, SMRI, Fall 2001 Meeting, 7–10 September 2001*, Albuquerque, New Mexico, USA, Solution Mining Research Institute, Encinitas, California, 198–210.
- Wilke F., Bornemann O. & Hellberg C., 2001. Geological Interpretation of Domal Salt Structures in the North European Zechstein Formation: Influence on Cavern Development. *Technical Meeting Papers, SMRI, Fall 2001 Meeting, 7–10 September 2001*, Albuquerque, New Mexico, USA, Solution Mining Research Institute, Encinitas, California, 211–220.
- Wilke F., Behlau J., Bornemann O. & Schweinsberg J., 2004. Geological 3D-Model for Predicting New Cavern Location. *Technical Meeting Papers, SMRI, Spring 2004 Meeting, 19–20 April 2004*, Wichita, Richmond, Kansas, USA. Solution Mining Research Institute, Encinitas, California 1–10.

- Tomassi-Morawiec H., Czapowski G., Bornemann O., Schramm M., Tadych J., Misiek G., Kolonko P. & Janiów S., 2006. Standard bromide profiles for Zechstein salt deposits of Poland: salts of PZ2 (Z2) cycle in Kłodawa salt mine. XI Międzynarodowe Sympozjum Solne QUO VADIS SAL, Polish Salt Mining Association, Abstracts, 62–63, Szklarska Poręba.
- Wysocki, E., Machnacz A., Kruczek S., Gulis L., Czapowski G., Tomassi-Morawiec H., Bornemann O. & Schramm M., 2006. Characteristics and genesis of the Upper Devonian deposits in the Prypec basin (Soligorsk area, Belarus) – preliminary report. XI. Międzynarodowe Sympozjum Solne QUO VADIS SAL, Polish Salt Mining Association, Abstracts: 67–68, Szklarska Poreba.
- Czapowski G., Tomassi-Morawiec H., Wysocki E., Bornemann O., Schramm M., Machnacz A., Kruczek S., Gulis L., 2007. Potash salts genesis – A case study report of the Upper Devonian potash deposit in the Pripyat Basin (Soligorsk area, Belarus). *25th IAS Meeting of Sedimentology*, Patras/Greece.
- Tomassi-Morawiec H., Czapowski G., Bornemann O., Schramm M., Tadych J., Misiek G., Kolonko P., Janiów S., 2007. Wzorcowe profile bromowe utworów solnych cechsztynu Polski: sole cyklu PZ2 (Z2) w Kopalni Soli Kłodawa. *Gospodarka Surowcami Mineralnymi*, 23, 1.
- Bornemann O., Behlau J., Fischbeck R., Hammer J., Jaritz W., Keller S., Mingerzahn G. & Schramm M., 2008. Standortbeschreibung Gorleben, Teil III: Ergebnisse der über- und untertägigen Erkundung des Salinars. *Geologisches Jahrbuch, Reihe C*, 73, 1–211.



Fig. 1. Otto Bornemann podczas chwili odpoczynku od badań (Kłodawa, 2005 r.)

Fig. 1. Rest minute of Otto Bornemann (Kłodawa, 2005)



Fig. 2. Otto Bornemann (w środku) podczas badań w Kopalni Soli Kłodawa (2005 r.).
Towarzyszą (od lewej) M. Schramm, J. Tanych i S. Janiów

Fig. 2. Otto Bornemann (center) during geological studies in the Kłodawa Salt Mine (2005)