



An obituary for Professor Dr. Hans-Georg Herbig (March 8th, 1955–August 1st, 2023)

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Hans-Georg Herbig passed away in Cologne on August, 1st 2023 at the age of 68 after a battle with cancer. For more than 26 years, he held the chair of Palaeontology and Historical Geology at the Universität zu Köln, from which he retired in 2021. With Hans-Georg, we are losing a recognised scientist and stratigrapher, a committed mediator and teacher of knowledge and science and an excellent field geologist far too early. In addition, he was a good friend and a valued colleague to many of us. Despite his illness, he never lost his optimism and zest for life.

Hans-Georg Herbig was born in March 1955 in the Franconian town of Würzburg (Germany), where he spent his school and youth years. In 1974, he concluded his school training at the Röntgen-Gymnasium with the Abitur. After the obligatory military service, Hans-Georg returned to his hometown and started to study geology and palaeontology at the Julius-Maximilians-Universität Würzburg from 1975 to 1980. This time at Würzburg laid the foundations for three characteristics of Hans-Georg's scientific career that followed him throughout his life: field work, all topics of the Devonian and Carboniferous periods, and geology of

Franconia. During these years in Würzburg, he also met his future wife Isabel, who would follow him not only to the different towns, where the career of Hans-Georg would bring the couple, later with their two sons, but also accompanied him to several field trips and field campaigns, e.g., Spain and China.

Hans-Georg loved doing field work and studying geological objects in all scales and in various regions. This brought him to many, sometimes rather exotic or remote places. When listening to his stories about particular adventures, one saw what a keen and detailed observer Hans-Georg was and how deep his interest was to discover new things of the study area, not only in geology and palaeontology, but also in culture, architecture, food and drinks, etc (Fig. 1).

Hans-Georg's interest for the geology of his beloved Franconian region is not that visible in his publication record (e.g., Geyer et al. 2019), but he was a fine connoisseur, which he illustrated well in student fieldtrips he guided to the region. The career-wise more important interest in the time at Würzburg University was getting in contact with the Devonian and Carboniferous periods of the Cantabrian Mountains in northern Spain during his diploma thesis (Herbig 1980) supervised by Professor Josef Gandl. Here, he laid the foundations for a geological career combining topics in sedimentology, stratigraphy, microfacies, palaeoecology, and taxonomy. His first publication (Herbig 1982) is based on fossil material collected during the field work for his diploma thesis.

Following his Diploma in Würzburg, Hans-Georg received a rather unexpected invitation to a short field trip to the upper Carboniferous and lower Permian succession of the Carnic Alps with Professor Erik Flügel (Universität Erlangen) accompanied by an American guest professor. He later understood that this occasion was not only the training for a Franconian to correctly pronounce in English rather long and complicated fossil names such as *Anthracoporella* and *Pseudoschwagerina*, but that this trip was an essential part of the recruitment process for a Ph.D. thesis.

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Fig. 1 Some photographs illustrating Hans-Georg's different roles throughout his career. 1. *The field geologist*: Hans-Georg during a campaign in the Cantabrian Mountains (Spain 2000). 2. *The teacher*: here on post-conference field trip of the 19th International Congress on the Carboniferous and Permian (ICCP; Rhenish Mountains 2019). 3. *The field geologist*: stop at the famous sand dunes of Erg Chebbi after a long day looking on the Devonian Kess-Kess mounds (Morocco 2009). 4. *The palaeontologist*: Hans-Georg collecting large cephalopods in the southern High Atlas. 5. *The tourist*: here during a

visit near the conference centre of the 16th International Congress on the Carboniferous and Permian in Nanjing (China 2007). 6. *The gardener*: Hans-Georg liked gardening and used his talents to clean several outcrops, especially before meetings and field trips. Here at Zippenhaus before the Carboniferous Conference Cologne (CCC-2006; Rhenish Mountains 2006). 7. *The organiser*: Welcome address in his role as Chair of the 19th International Congress on the Carboniferous and Permian in Cologne (Germany 2019)

Hans-Georg moved to the Friedrich-Alexander-Universität Erlangen-Nürnberg. There, under the supervision of Erik Flügel (1981–1983), he spent 3 years with the reconstruction of a Devonian-Carboniferous shelf system in the Betic Cordillera (SE Spain), which is documented only in the pebbles of flysch deposits of the Cenozoic Malagides (Herbig 1984). It was also the moment, when he came in contact with Prof. Bernard Mamet (University of Montréal, Canada) and a fruitful lasting cooperation on calcareous microbiota started (e.g., Herbig and Mamet 1985, 2006; Mamet and Herbig 1990). Hans-Georg loved to explain what happened when he presented for the first time his results to an international public at the International Congress on the Carboniferous in Madrid (1983). He was very nervous, and Bernard Mamet just told him: ‘Herbig! Relax, you just need a beer!’ and made him drink one 30 min before the talk. Hans-Georg was a quick learner and later recommended the same to his own students. During his Erlangen time, Hans-Georg shared the office with several young scientists, who would later become professors at various German universities. This gang made the Erlangen Institute for Palaeontology in the Loewenichstrasse a very lively place.

After his Ph.D., Hans-Georg left the Franconian region and found a new professional home in the research group of Professor Volker Jacobshagen at the Freie Universität (FU) (West-)Berlin. In his Berlin time, from 1983 to 1990, Hans-Georg started to become involved in teaching duties, especially the different mapping field classes of the FU in northern Hesse (Eschwege) and the German Alps (Oberstdorf, Allgäu). He also supervised his first ‘own’ students for their diploma theses and became involved in the supervision of Ph.D. students. He always said that he had his first Ph.D. student in Berlin, although, on paper, the supervisor was his boss Prof. Jacobshagen.

During the Berlin time, his research focussed on the Palaeogene strata of the High and Middle Atlas directly derived from the large research projects of the FU Berlin in Morocco (e.g., Herbig 1987, 1988). He conducted numerous extensive field campaigns in rather remote areas, often alone in one of the beloved VW minibuses of the FU Berlin. Also, at this time, Hans-Georg fell in love with four-wheel drive vehicles, which resulted decades later in the purchase of ‘his’ Land Rover (‘Landie’). The work in Morocco culminated 1990 in the successfully defended habilitation thesis entitled ‘The Palaeogene at the southern border of the central High Atlas and the Middle Atlas of Morocco: Stratigraphy, facies, palaeogeography and palaeotectonics’ (Herbig 1991). But even when he was heavily involved in the Moroccan Palaeogene, he continued to publish on his beloved Carboniferous. It is during this time that Hans-Georg started to publish on Carboniferous corals and reef builders (e.g., Herbig 1986; Herbig and Kuss 1988) a research topic, which is also dealt

in his last manuscript he worked on before his death (El-Desouky et al. 2023).

In 1990, Hans-Georg moved with his family from the vibrant and lively just reunited metropolis of Berlin to the small rural village of Friebertshausen (Hesse), because he got the opportunity to work at Philipps Universität Marburg. The Marburg time was characterised by the return to the scientific roots in the Devonian and Carboniferous as primary research focus. During these years, the focus of Hans-Georg’s studies was on the evolution of the German Kulm Basin, particularly on the depositional environment and stratigraphy of its deeper water facies and the transition into the time-equivalent shallow-water platforms (Herbig and Bender 1992; Bender et al. 1993).

In early 1995, Hans-Georg was appointed Chair of Palaeontology and Historical Geology at the Universität zu Köln, where he has been an inspiring teacher for numerous generations of students. He continued to explore his diverse research interests. Reefs and reef builders of the Palaeozoic and basinal deposits of Devonian-Carboniferous times remained major research topics (e.g., Aretz and Herbig 2003; Hartenfels et al. 2022). However, Hans-Georg could never restrict his interests to one single topic and tried to integrate data and approaches from very different fields to understand the larger evolution of the geosphere and biosphere (e.g., Herbig et al. 2004; Nyhuis and Herbig 2009). This principle not only guided his research, but also the education of ‘his’ students.

In his research, he covered a very large thematic spectrum and long stratigraphical intervals from the Precambrian to the Recent, and he even ventured into recent genetical studies of barnacles (Schiffer and Herbig 2016). Hans-Georg invested much time in the supervision of students on the Diploma, Bachelor, Master, and PhD levels. Very many students, not only from his own working group, benefited from discussions about various topics related to their projects in the field and in the office. Those who were lucky experienced the enthusiastic carbonate sedimentologist and palaeontologist Hans-Georg became when sitting at his microscope in the ever crowded ‘research room’ adjacent to his office. However, those times were always rarer than Hans-Georg wished for. As many professors he had extensive administrative tasks within and outside the university, and these were often put in front of his personal research interests and ambitions. The paper, in which he presented his synthesis on the German Kulm (Herbig 2016), was for years in the making and its foundations were largely laid during the Marburg time two decades before. However, this long time was also very beneficial, since Hans-Georg had constantly integrated and tested new ideas, concepts, and approaches, and exchanged with many colleagues. In the end, he wrote a masterpiece, which used a regional example to clarify fundamental process and to offer a global

perspective for understanding processes and basin evolution beyond the stratigraphical context of the Carboniferous.

It is not our aim to list all the positions and responsibilities Hans-Georg carried during his time in Cologne, but we have to mention at least the one why this volume is published in *Paläontologische Zeitschrift*. From 1998 to 2000, he was president of the *Paläontologische Gesellschaft*. During his tenure, major modernisations were initiated; some were time-consuming and hardly visible for most people, but others were profound changes in setting the pace for a scientific association adapting to the time of fast information exchange and communication.

From the year 2000 onwards, he was increasingly concerned with topics of Carboniferous stratigraphy; from 2006 until 2015, he has been chairman of the German Stratigraphic Subcommission on the Carboniferous (SKS); from 2016 until his death, he was chairman of the German Stratigraphic Commission (DSK). He was also serving his second term as voting member in the International Subcommission on Carboniferous Stratigraphy (SCCS). One highlight of his stratigraphic work is the detailed correlation between the stratigraphic successions of shallow-water ('Kohlenkalk') and deep-water ('Kulm') successions in the German lower Carboniferous (Amler and Herbig 2006).

Hans-Georg's retirement in March 2021 fell into the COVID-19 period with all its restrictions. Unfortunately, this did not allow to organise all the festive events normally associated with such important occasions. In fact, the 19th International Congress on the Carboniferous and Permian (ICCP), organised 2019 in Cologne by a team chaired by Hans-Georg (Herbig et al. 2021, 2022), was the premature scientific and also celebratory event for his retirement and his scientific legacy, even if we did not know it at the time.

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Declarations

Conflict of interest The authors have no competing interests to declare.

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