Angewandte 50 Years International Edition Chemie

Gernot Boche (1938–2011)

Gernot Boche, professor of Organic Chemisttry at the Philipps Universität Marburg from 1979 to 2001, passed away at the age of 73 on March 10, 2011. It was Boche who shed light on the nature of organolithium compounds with numerous crystal-structure analyses.[1] The combination of structural information and detailed NMR investigations laid the basis for a deep understanding of the nature and reactivity of organolithium compounds in solution. Boche was fascinated in particular by α-heterosubstituted organolithium compounds and their electrophilic, that is, carbenoid properties.[2] He recognized the structural prerequisites for this behavior, which is of intrinsic importance in preparative organic chemistry. These contributions were honored in 2001 by the Arfvedson–Schlenk Prize of the German Chemical Society (GDCh). Another gemstone of Boche's studies that is of particular significance addressed the structure and properties of lower- and higher-order cuprates.[3] He himself rated these studies as his most important contributions, as they brought an end to a controversy that had raged for decades.[4] Boche's scientific interests had a truly wide scope and led him to the borderlines to biology and medicine. This was quite unusual for a hard-core organic chemist during the 1980s. Boche investigated the mechanism of carcinogenesis by aromatic amines by taking a chemical approach. He was able to synthesize and characterize a class of ultimate carcinogens that were postulated to arise by metabolic oxidation of aromatic amines, the *N*-aryl-*O*-acylhydroxylamines. Owing to his efforts, it became clear that these compounds are in fact the agents that modify nucleotides by reacting with DNA. Understanding these processes provided Boche with guidelines for modifying aromatic amines in a way that prevents them from entering this metabolic pathway and hence formed the basis of *Ames*-negative dyes. The amination of nucleic acids by *N*-aryl-*O*-acylhydroxylamines proved to be a general route to aminate nucleophiles, which supplemented the methodology of organic synthesis. Be it chance or not: the electrophilic behavior of these aminating agents as nitrenoids corresponds exactly to the electrophilic behavior of carbenoids, thus closing the circle of Boche's scientific interests.

Gernot Boche was born on May 18, 1938 in Bad Cannstadt as the elder of two sons of Emma and Kurt Boche, a teacher at the local elementary school. Boche went through school in the Swabian town of Kirchheim/Teck and subsequently studied chemistry at the universities of Stuttgart and Vienna. After finishing his diploma thesis in physical chemistry with Theodor Förster in Stuttgart, Boche moved to the Ludwig-Maximilians Universität in Munich, where he received his doctorate with Rolf Huisgen in 1967. After postdoctoral studies with E. E. van Tamelen at Stanford University, Boche returned to Munich to complete his habilitation in 1974 by studying isomerization and cycloaddition reactions of organolithium, -sodium, and -potassium compounds. Following a visiting professorship at the University of Wisconsin, in 1979 Boche accepted an offer by the Philipps Universität in Marburg as full professor.

His recruitment initiated a prosperous "golden age" of organometallic chemistry at the University of Marburg. Soon the critical mass was reached for the successful application for special grants, such as a Collaborative Research Center and a Research Training Group for this research field in which Boche was a key player, and not merely in scientific respects. Being a *homo politicus*, he managed to create a climate of intense scientific discussion, cordial collaboration, and collegiality, features that became distinctive for Marburg. Those who had the good luck to be one of Gernot's colleagues value this aspect in particular.

Gernot Boche always transmitted a holistic view of chemistry to his students, as he was convinced that present-day research in chemistry has to address problems from widely varying areas, including problems of daily life. He advocated that thinking in terms of inorganic, physical, organic, and biochemistry as separate entities is an attitude of the past. Accordingly, in the group seminars he frequently addressed topics from areas remote to chemistry. Boche is remembered by his graduates as a demanding but at the same time also quite humorous teacher who took a genuine interest in the wellbeing of each of his graduates. Even after his retirement and having moved with wife Anne Marie Boche from Marburg back to Munich, he regularly organized meetings with his group members that were attended by alumni from several generations in quite impressive numbers. They vividly remember the last meeting on the occasion of his 70th birthday.

We, his colleagues and friends, his former students, and all those who had contact to Gernot Boche, will painfully miss him.

Gernot Boche

Reinhard W. Hoffmann
Fachbereich Chemie der Philipps Universität Marburg

Michael Famulok
Life & Medical Sciences Institute, Chemical Biology Unit, Rheinische Friedrich-Wilhelms Universität Bonn

[1] G. Boche, *Angew. Chem.* **1989**, *101*, 286–306; *Angew. Chem. Int. Ed. Engl.* **1989**, *28*, 277–297.
[2] G. Boche, J. C. W. Lohrenz, *Chem. Rev.* **2001**, *101*, 697–765.

[3] a) M. John, C. Auel, C. Behrens, M. Marsch, K. Harms, F. Bosold, R. M. Gschwind, P. R. Rajamohanan, G. Boche, *Chem. Eur. J.* **2000**, *6*, 3060 – 3068; b) R. M. Gschwind, X. Xie, P. R. Rajamohanan, C. Auel, G. Boche, *J. Am. Chem. Soc.* **2001**, *123*, 7299 – 7304.

[4] N. Krause, *Angew. Chem.* **1999**, *111*, 83 – 85; *Angew. Chem. Int. Ed.* **1999**, *38*, 79 – 81.

DOI: 10.1002/anie.201102565

