Inside the AMS

Robert G. Bartle (1927–2003)

Robert G. Bartle, who had a distinguished career at the University of Illinois and Eastern Michigan University and a long association with *Mathematical Reviews*, died in Ann Arbor, Michigan, on September 18, 2003, following a long battle with mantel cell lymphoma.

Biography

Bob Bartle was born in Kansas City, Missouri, in 1927. He obtained his undergraduate education at Swarthmore College in Pennsylvania and his Ph.D. at the University of Chicago in 1951, his thesis written under the direction of Lawrence M. Graves.

Bob spent the years 1951–55 at Yale University, the first year as a postdoctoral fellow of the Atomic Energy Commission. In 1955 he became a faculty member at the University of Illinois in Urbana-Champaign. He was acting head of the Department of Mathematics in 1971 and associate head in 1979–80. He traveled extensively and held visiting positions at Berkeley; Cambridge University; the Romanian Academy of Sciences; Georgia Institute of Technology; and Imperial College, University of London. He spent six years as executive editor of *Mathematical Reviews* in Ann Arbor, from 1976 to 1978 and again from 1986 to 1990. He retired from the University of Illinois in 1990 and accepted a position at Eastern Michigan University, from which he retired in 1998.

After his second term as executive editor ended in 1990, Bob and his wife, Carolyn, continued to live in Ann Arbor. They were enthusiastic participants in the rich cultural life of Ann Arbor, attending concerts, plays, dance performances, and operas. Their concert season ticket seats were chosen so that Bob always had a clear view of the French horns, which he himself played earlier in his life. They continued their regular trips to the Lyric Opera in Chicago, often seeing two operas during a weekend. Bob and Carolyn were also inveterate travelers, especially after Bob retired. Their varied trips included a long tour of Australia and New Zealand and a flight to London on the Concorde. Bob's lively enjoyment of these new experiences was typical of his zestful attitude toward life. His friends and colleagues will always remember his warmth and humor, and especially his infectious chuckle.

Mathematics

Bob is well known to mathematics students around the world for his influential textbooks, in particular *The Elements of Real Analysis* [2] and *Introduction to Real Analysis* [4] (the second coauthored with Donald R. Sherbert). Each was published in more than one edition and in several languages.

Early in his career Bob published eight papers in rapid succession, most of them in functional analysis. His paper "A general bilinear vector integral" [1] signaled a lifelong interest in integration theory. There was also an invitation from Nelson Dunford and Jacob Schwartz to participate in a writing project on linear operators on Banach spaces. Over a period of years, together with William Bade, he wrote elaborate notes and remarks for the three-volume, 2,592-page treatise *Linear Operators* [8], [9], [10] under the authorship of Dunford and Schwartz. The volumes were awarded an AMS Steele Prize in 1981. Throughout his career, Bob's research focused on linear operators and spectral theory and on integration theory. He published a number of papers and directed a dozen doctoral students in the 1960s. During the same period he turned to textbook writing. Following quickly after his first book, *The Elements of Real Analysis* [2] in 1964, he published his short and elegant book on the Lebesgue integral, *The Elements of Integration* (1966) [3], which was and still is a favorite of graduate students preparing for prelims. He and coauthor C. Ionescu Tulcea published a calculus text in 1968; it received praise from reviewers, but one faculty member summarized the situation succinctly: "Can't use it—it's too good."

In the 1970s and 1980s Bob continued working in the area of Banach spaces and spectral theory but shifted some of his energy to new interests in international activities while maintaining his writing and editorial work. Bob wanted to make real analysis more accessible to a wider audience and reach students in applied areas by using a sequential rather than topological approach and concentrating on functions of one variable. The resulting book was *Introduction to Real Analysis* [4] with coauthor Sherbert. His enthusiasm

for the Henstock integral was revealed in his "Return to the Riemann Integral" [6], for which he won a 1997 MAA Lester R. Ford Award. A chapter on the subject was written for the third edition of the analysis book, published in the year 2000. He wrote a thorough treatment of the one-variable theory in his last book, *A Modern Theory of Integration* [7], published at age seventy-three. As with most of his earlier books, this one too was very well received. For a period after it was published, it was an AMS "best-seller". He was working on the multivariable Henstock theory, intending to publish a second volume, when his life was changed by cancer.

Bob served as thesis director for fifteen doctoral students and was heavily involved in Illinois's graduate program. He also served as associate editor and managing editor of the *Illinois Mathematics Journal* for a number of years.

Mathematical Reviews

Bob's long association with *Mathematical Reviews* (MR) began fifty years ago, in 1953, when he signed up as a reviewer. His first review appeared in the February 1954 issue of MR, and he remained an active reviewer for the rest of his life. His final, 363rd, review was published on MathSciNet in August 2003. In 1974 he became more closely associated with MR when he was appointed to the Mathematical Reviews Editorial Committee (MREC). Two years later he took over as executive editor (EE). Prior to Bob's appointment as EE, there had been a period of increasing administrative problems at the MR office, but under Bob's leadership good relations with authors and reviewers were restored, in part because of his credentials as a scholar and his visibility in the community. He was also extremely popular with the MR staff, so much so that the staff arranged a testimonial that appeared in *Current Mathematical Publications* in August 1978. The issue is "gratefully dedicated" to Bob, "who served the mathematical community with indefatigable energy as Executive Editor from July 1976 to July 1978." His administrative assistant at the time describes him as "the best boss she ever had." Another staff member has described him as "one of the good guys." Bob returned to Illinois in 1978, but following a three-year term on MREC (1983–86), he came back to Ann Arbor in 1986 when he was once again appointed EE.

During Bob's first tenure as EE the first tentative steps had been taken towards computerization of the MR operation. When he returned, much had changed: the monthly issue was produced from electronic files rather than hard lead typesetting, and conversion of the older MR data to electronic format had been completed. MR was now available in electronic format from several vendors. In 1989, during Bob's last year as EE, MR data was made available on a CD-ROM as MathSciDisc. The project to convert the bibliographic data for the early years of MR also began that year. From 1976, Bob's first year as EE, to 1990 there was tremendous growth in the MR Database. In the years from 1940 to 1979, approximately 500,000 reviews were published, and only ten years later, in 1989, the millionth item was added to the MR Database.

An activity that consumed much of Bob's time was the revision of the Mathematics Subject Classification. In the days before regular use of email and fax machines, the task of coordinating and collating the suggestions of twelve MR editors and a similar number of editors at *Zentralblatt für Mathematik*, along with comments of many interested mathematicians around the world, was no mean feat.

In 1990 Bob arranged a splendid celebration of the fiftieth anniversary of the founding of MR at the Joint Mathematics Meetings in Louisville, Kentucky. Attendees at the evening session, at which Saunders Mac Lane was main speaker, were given an anniversary booklet that included Bob's article "A brief history of the mathematical literature" [5]. This scholarly response to the occasion was indicative of his philosophy as EE. He approached his editorial duties pragmatically; he was keen to uphold the long tradition of high quality at MR, but he was also aware that the staff had to get an issue out the door each month and could have fun doing it.

After his retirement from the EE position, Bob continued to stay in touch with MR staff, stopping in the office periodically to chat with friends. He and Carolyn were regular attendees at office functions and enjoyed the tradition established during Bob's tenure of dressing appropriately for the occasion: funny noses at Halloween and gaudy Santa Claus ties and socks at the holiday party.

MR staff past and present, along with his family, friends, and colleagues around the world, will miss Bob in many different ways, but most of all for his humanity.

References

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—Jane E. Kister, Mathematical Reviews
—Donald R. Sherbert, University of Illinois, Urbana-Champaign