



Obituary: Edward Griffith Begle

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EDWARD GRIFFITH BEGLE

MARTHA ZELINKA

The mathematical community has lost one of its most distinguished leaders—Edward G. Begle died March 2, 1978.

In 1969, the Mathematical Association of America presented him with the Distinguished Service Award, a well-deserved honor for a man who has given so much to so many. Not even a decade has elapsed since then, and we are now honoring his memory. The debt we owe him is as incalculable as his impact on the school mathematics curriculum is timeless.

For fear that my heart would run away with me in my love and esteem for Ed and that only my thoughts and impressions would be recorded here, I invited comments from friends and colleagues in different professional positions, academic and non-academic, with different philosophies, who had played different roles in the big School Mathematics Study Group (SMSG) family. I was delighted with the numerous and voluminous responses. They are more eloquent than I could ever hope to be. From a group of very different personalities, such as only SMSG can gather, there resounds a message, clear and loud, a testimony to Ed's very triumph, so characteristic of his monumental achievement, moulding diversity into unity: Ed, we love you, respect you, and are forever indebted to you.

Edward G. Begle took his place as a mathematician early, and his deep concern for the student became apparent from the outset. Let me quote from Professor Charles E. Rickart's remarks: "Ed and I first taught Algebra to Army ASTP students, and then Calculus to Yale freshmen, spending hours discussing the problems of that teaching. Out of this grew Begle's elementary calculus text, which was unique at the time in that it contained serious mathematics written not for colleagues but for the students themselves.... Ed began his career as a topologist, with a Ph.D. from Princeton University under Professor Lefschetz, and was on his way to becoming a first-rate research mathematician. However, his destiny lay in another direction."

And Professor Edwin E. Moise states: "I should mention that while Ed's career as a research mathematician was brief, his work was solid and important. His papers looked good when they appeared, and after twenty-five or thirty years, they still do. (For example, he wrote the first valid proof of the Vietoris Theorem.)"

Ed's talent for administration was recognized. He was called upon to serve as Secretary of the American Mathematical Society, and it was quite natural that he was chosen to head up the School Mathematics Study Group when it was first organized. The SMSG experiment was one of magnitude and complexity, in scope, depth, and size. Professor Donald E. Richmond notes: "Ed guided without dominating. His exceptional integrity ensured that SMSG was administered with scrupulous honesty.... Throughout, Ed dictated no solutions but strove to harmonize the opinions of all...no curriculum was to be imposed on any school system."

Ed's leadership qualities were exercised in bringing together a wide variety of individuals, from elementary-school to college-level teachers, recognized educators and distinguished research mathematicians; they learned to communicate with each other, to respect each other, and to form efficient writing groups. It is difficult to imagine that anybody but Ed could have orchestrated such a performance. Let me illustrate, by quoting from the responses, what adding the right chords means to leading discord into harmony. The references go back to Chicago meetings in the early sixties:

Philip J. Davis: "...At that time I was a mathematical conservative (perhaps a revisionist) and I

Martha Zelinka received her M.A. degree from the University of Vienna and teaches mathematics at Weston High School, Weston, Massachusetts. She was extensively involved in SMSG and has also been active in connection with the New Mathematical Library, the Advanced Placement Mathematics Program, and the High School Mathematics Contests.—*Editors*

did not think well of attempts to reduce school mathematics to dry-as-dust axiomatics or abstract structure. Perhaps Begle wanted me on his Committee for balance. In any case, I certainly enjoyed the sense of vitality that issued from the 'New Math' in those days. It was infectious. As chairman, Begle was a firm, gentlemanly, and energetic man.... The meeting in Chicago broke into acrimonious polarization, and the dogmatism and self-righteousness of the abstractionist party and the fury with which they held to their views was matched only by the firmness and sweet reasonableness of my own henchmen. Ed Begle chaired this meeting, listening to all patiently, never once losing his cool, successfully controlling this scrapping zoo of mathematicians...."

Mario L. Juncosa: "... We were meeting to consider devising tests which would distinguish the two classes of students (those that had 'New' math training and those who hadn't). Ed Begle was a great chairman in letting everyone speak out so that all were heard, no rancor developed, but work was accomplished. A balanced, comprehensive, and detailed outline of what should be tested evolved from a group of about sixteen people with fairly strong opinions—quite an achievement...."

Jeremy Kilpatrick: "... To me, his most impressive quality, apart from his intelligence, was his absolute and unwavering integrity. He staked out the territory of mathematics education in a wilderness full of predators, some of whom would sell their mother for a state textbook adoption. Putting together teams of people who had never even met before, he inspired them to produce more than they might have thought possible. He had a knack for judging who could do what and for getting them to do it. Like some patriarch from the Old West, he commanded allegiance because of what he was and what he stood for...."

One can only hope that Ed knew how many friends he had who felt so deeply and sincerely about him and his work.

The impact of SMSG on the school scene was immediate. Ed's ingenious plan included centers where teachers who used the experimental texts met with a consultant from a college or university. "He taught us to be concerned about mathematics in the classroom," says Professor Vincent Haag.

Dedication, enthusiasm, and hard work brought good results. Let me quote a remark of a great teacher, Martha Hildebrandt: "Dr. Begle wanted students to enjoy their work in mathematics so much that they would want to own and keep their textbooks, as you would a friend.... I myself have seen excellent thinking and learning as well as teaching done in the elementary and secondary classroom because of the SMSG texts. Some of it has been most beautiful and amazing, all of it the finest tribute which could be paid to Dr. Begle, mostly by people who did not know him personally but enjoyed their mathematics and were more capable of using it because of his efforts."

The above can be appreciated only if you know the excitement in a classroom when students take an active part in using new, interesting materials and become participants—how proud they were when their comments and criticisms were sent to headquarters at Yale and later at Stanford. There was a lot of learning going on. And, in the hands of the right person, the books are as good now as ever.

In 1961, from a newspaper in New Haven, Connecticut: "Yale University announced that it has revamped its freshman mathematics program to meet the needs of students with better high school training in the subject. The announcement was the first indication from a major American university of the value of the post-Sputnik surge to improve high school mathematics courses. Professor Charles E. Rickart, chairman of the Yale mathematics department, said that traditional freshmen math courses—analytical geometry and calculus—were replaced by a three-category program designed to meet the individual background of entering students...."

The books produced by SMSG, and books that borrowed heavily from them, are among the best teaching materials used widely in the United States; they, that is Edward G. Begle, influenced the nation and, far beyond our boundaries, the globe.

Let me quote Bryan Thwaites (Westfield College, University of London): "Not being a pure mathematician, I had not heard of Professor Begle in his younger days as a creative researcher in his own subject. But as soon as I and a few others in England began to gather together in the late 1950's to talk about the deteriorating situation of mathematics and especially about the need to reform the

content of school mathematics, the name of Begle sprang out of nowhere, so to speak, apparently heading every list and every communication which came to us from other countries.... So by 1961 he and his work with the SMSG were already well known to us.... And that was the year of his visit to this country as a participant of—and (little did he suspect) a guide of incalculable value to—the Southampton Mathematical Conference 1961.... How, you may ask, have we in the U.K. viewed Professor Begle's achievements as head of that (to us) vast organization of the School Mathematics Study Group? First he led the way to team authorship, a startling innovation for conservative Europeans, but one which we adopted with fervour and moulded to our own fashion.... Second, the sheer drive and administrative skill with which he prosecuted the SMSG's activities were abundant causes for astonishment and admiration on this side of the Atlantic.... Third,...groups all over the world would constantly be referring back, or across, to what was going on at Stanford. Whether or not there was invariably agreement is beside the point: what mattered was the sense that something very definite was happening under Ed's leadership. Fourth,...One felt that there was no sense of competition in him; rather that he was carrying out some preordained strategy whose merits would ultimately be tested by the experience of millions of children and their teachers...."

It is impossible to portray the spirit and excitement of the old SMSG days, when so much was accomplished, so much was possible. In addition to the development of Sample Textbooks for School Mathematics, Ed initiated the National Longitudinal Study of Mathematical Abilities, an enormous undertaking, which he carried out with characteristic thoroughness, setting a standard for all subsequent studies. His fascination with research in mathematics education continued for the rest of his life.

Those of us who were privileged to work under Ed's guidance, who participated in summer writing sessions, have a vivid image of Ed. SMSG was housed on Stanford University campus in Cedar Hall—it can boast of no charm—a one-story-high, long-stretched-out building with one feature, seemingly built for Ed—a corridor that ran its full length. On either side were small rooms, where we did our writing, meeting, work. Ed Begle, looking stern, almost fear-inspiring, deep in thought, paced the hall from one end to the other. If you had to pass him, you practically stopped breathing, for fear that you might interrupt. The scene was the same during the regular school year; his taciturnity and pacing continued, as Jeremy Kilpatrick recalls from his days of graduate school: "I used to be so afraid of taking time from his crowded schedule that I would save up questions to ask of him for several days until I could find him alone in his office. I learned to phrase my questions in almost telegraphic style and to expect brief responses in return. In later years, I treasured letters of more than two sentences from Ed as veritable volumes."

Professor Anneli Lax has been the Technical Editor of The New Mathematical Library, an SMSG Monograph Project taken over by the MAA in 1975. Quoting from her response: "One of my strongest recollections is corresponding with Ed. I would write a rather verbose letter, reporting on what I was doing and asking a question now and then. His prompt reply usually consisted of a single sentence; a few had the form: 'Dear Anneli: Yes. Best regards, Ed.' The occasions when Ed wrote more than one paragraph were so memorable that I wanted to frame such letters."

Ed was completely dedicated to his profession; he was a hard worker. He was a man of broad interests and tastes, devoid of any pomposity.

But the account would be incomplete if I did not mention that in all the years of his great achievements there was by his side a unique person, his wife Elsie. Together in their love and concern for each other, they could meet joys and sorrows. They brought up a beautiful family, now rich with memories. Ed, with his gruff exterior, was a gentle man, with a deep love for children, who in turn responded with warmth. As Professor Lowell Paige expressed it so well at the Memorial Service for Ed: "He comforted friends in sorrow, he shared the pleasures of their successes, and admonished them of any shortcomings."

Our loss is great but his legacy is rich.