Ralph P. Boas, Jr.

There are many reasons to applaud the life and work of **Ralph P. Boas, Jr.** (August 8, 1912 – July 25, 1992). He was an exceptional mathematician, administrator, author, editor, and teacher. His research focused on real and complex analysis, Fourier series, moment problems, and Tauberian completeness, uniqueness and integrability theorems. What made him so special was his wonderful sense of humor that he shared with the world through verses, stories, anecdotes, and recollections. Boas was born in Walla Walla, Washington where his father held a position with the English department of Whitman College. After that the family moved around quite a bit and it wasn't until Ralph was about eight years old that his mother thought to enroll him in a grade school. Apparently his home schooling had been effective as the principal who examined him placed Ralph in the sixth grade. Being younger and smaller than his classmates made school a trial for him so he spent a great amount of time browsing through his parents' extensive library. More interested in languages than in mathematics, Boas graduated from high school before his sixteenth birthday and went on to Harvard, intending to major in chemistry and then enter medical school. Discovering that his chemistry preparation was inadequate, he turned to mathematics, which he knew well. Boas earned an A.B. degree in 1933, and in 1937 he was awarded a Ph.D. for a thesis written under the direction of D.V. Widder.

A National Research Fellowship enabled Boas to go to Princeton to work with Salomon Bochner and from there to Cambridge, England where he attended the lectures of Hardy, Littlewood and Abram S. Besicovitch. On his return to the United States Boas accepted a lectureship with Duke University, remaining there from 1939 to1942. He followed this with a year teaching at the U.S. Navy Pre-Flight School in Chapel Hill, North Carolina. Boas admitted that he applied for this position to avoid being drafted. His editorial career began in 1945 as the Executive Editor of *Mathematical Reviews*, while supplementing his income lecturing at the Massachusetts Institute of Technology. In addition to his mathematical talent, Boas' mastery of languages proved very useful in his editorial capacity. Besides knowing Greek, Latin, French, Sanskrit and German, he learned Russian by reviewing Russian papers for *Mathematical Reviews*.

Around 1949, Northwestern University in Evanston, Illinois was in the process of building a research-oriented department. Boas was asked to become chair. Although all his previous positions had been at the lecturer level he was hired as a full professor without going through the intermediate steps of being promoted through the ranks. He declined the offer of chairperson when he joined the department, but finally accepted the duties in 1957, holding the post until 1972. He was responsible for hiring a top-notch faculty at the same time he was writing and publishing some 200 research papers. He was celebrated as a masterful teacher and lecturer. Once after giving a talk, a member of the audience remarked, "You seem to make mathematics sound like fun." Boas' priceless response was, "If it isn't fun, why do it?"

Boas' lucidly written books are *Entire Functions* (1954), still a standard textbook in the field, *A Primer of Real Functions* (1960), and *Invitation to Complex Analysis* (1987). He also published the authoritative monographs, *Polynomial Expansions of Analytic Functions* (1958) written jointly with his Ph.D. student R. Creighton Buck. Boas was Vice-President of the American Mathematical Society (1959-1960), and President of the Mathematical Association of America (1973 – 1974). He served as editor of the *American Mathematical Monthly* (1976-1981), *Selecta Mathematica Sovietica* (1981, 1982), and co-editor with George Leitmann of the *Journal of Mathematical Analysis and Applications* (1985-1991).

As an example of Boas' playful and mischievous mathematical nature, we return to the academic year 1937-1938 when he and Frank Smithies of England were both doing post-doctoral work at Princeton. They decided to publish a paper on the "Mathematical Theory of Big Game Hunting." Over the years the number of tongue-in-cheek mathematical techniques for catching a lion in a desert has grown significantly. The easiest for general readers to understand is the following: "The lion is big game, hence certainly a game. There exists an optimal strategy. Follow it." However, it isn't the humor of the techniques that will be shared here. Rather it is the joke that Boas and Smithies played on the mathematical world that is worth telling. They submitted their article to the *American Mathematical Monthly* with a covering letter over the signature of E.Z. Pondiczery, who explained that he would prefer to publish the paper pseudonymously using the name of H. Pétard and that's how it appeared when it was published in 1938. Boas and Smithies had chosen the first pseudonym Pondiczery as a Polish-sounding version of Pondicherry, one of the French enclaves in India. The second-level pseudonym Pétard, whose full initials are H.W.O., came from Shakespeare's *Hamlet*; "the engineer, hoist with his own petard." Later the two published short notes under the name of Pondiczery and even had him write a number of critiques for *Mathematical Reviews*. To complete their little comedy, Boas and Smithies announced the engagement and upcoming marriage of Betti Bourbaki and H. Pétard.

Boas died at his home in Seattle just two weeks before his 80th birthday. He was survived by his wife Mary Layne Boas, Professor Emerita of Physics at DePaul University, whom he married in 1941. They had a daughter Anne and two sons, Ralph and Harold; the last is a Professor of Mathematics at Texas A&M University. The following is one of Boas' verses, "Contemporary Love Song," found in *Lion Hunting & Other Mathematical Pursuits* (1995) edited by Gerald L. Alexanderson and Dale H. Mugler.

Instructor, ponder this codicil,
An awkward truth that you can't gainsay:
What you are teaching now, with so much good will,
Is tomorrow's math of yesterday.

There are mathematicians who believe any form of levity is out of place in their field. Boas would probably pity them. This is a funny old world and if mathematical humor is somewhat subtler, ironic and intellectual than that found in other fields, it may be because of the way mathematicians look at things. Among the teachers I remember most fondly are those who shared their sense of fun with their students. Unfortunately, too few of my mathematics professors fell into this category. I recall a Professor, who was regarded only as a lecturing machine with no apparent personality. Each day of an intense yearlong complex analysis course he filled the board with symbols, theorems, and proofs without once interjecting any amusing or informative tidbit about the subject. However, on the last day of the course he announced to the class that he had found a way to teach the course we had just completed in a six-week period. When he was asked, "But what of the students?" With just the hint of a smile he replied, "Oh, there'll be no students." Now that's funny [to a mathematician at least].

Quotation of the Day: "I cannot remember who first remarked that a sweater is what a child puts on when its parent feels cool; but a proof is what students have to listen to when the teacher feels shaky about a theorem." – Ralph P. Boas, Jr.