Robert L. Pigford

1917-1988

By Arthur B. Metzner

Robert L. Pigford died on August 4, 1988, after suffering a stroke on May 14. His strength had previously been severely sapped by a heart attack in June 1987, but he had worked diligently to revitalize his physical vigor after that event and he continued to serve his university with enthusiasm as a senior colleague, a trustee, and our preeminent scholar.

Robert Pigford was born and raised in Meridian, Mississippi. He received a B.S. degree in chemical engineering from Mississippi State College in 1938 and his M.S. and Ph.D. degrees from the University of Illinois in 1940 and 1942, respectively. Robert and Marian Pigford moved to Delaware in 1941 when he accepted employment with the DuPont Company, and very shortly thereafter he began his association with the University of Delaware on a part-time basis, teaching evening and weekend courses. His department continues to receive regular requests to this day—nearly half a century later—for copies of his long out-of-print textbook, *The Application of Differential Equations to Chemical Engineering Problems*, which was based on his early lectures at our university and coauthored with another DuPont colleague W. R. Marshall.

In 1947 Allan Colburn, noting that Robert Pigford was spending increasing portions of his evening and weekend hours on campus, invited him to come to the university
during weekday daylight periods as well. The invitation was an offer to appoint him, at age thirty, chairman of the Department of Chemical Engineering. Robert Pigford consulted his industrial colleagues about the wisdom of such a move; their response was to advise him to make a listing of the objective advantages of each career alternative. Of course, they were confident that a continuing productive career with the nation's leading chemical company would appear much more attractive than the alternative of work in a fledgling department in an underdeveloped university with no Ph.D. programs and with few resources. And just as they had anticipated, when the listing was made, all of the objective advantages were with the industrial option. But, of course, there were also nonquantifiable subjective attractions to the university career: forging a new department and, indeed, assisting in the development of an entire university; working with succeeding classes of young scholars and assisting in the emerging renaissance of his profession; and getting the opportunity in Robert Pigford's words "to have fun professionally."

We all know what his choice was, but this story was the basis of his frequent advice to students and to younger colleagues in subsequent years: "always choose the professional alternative which you would find to be the most enjoyable. It is only by making this choice that you will throw yourself into your work with sufficient enthusiasm and vigor to become an accomplished professional and, as a by-product, a serene and supportive spouse and parent."

What fun it was for all of us who were to be associated with him! We learned to laugh together as well as to work together, and to live together. Marian and Robert Pigford opened their hearts as well as their home to our families, and we benefitted unashamedly from their devotion to this, their family of scholars. If any of us, who were long-term friends of the Pigfords, developed some altruistic qualities, it would have been due in large measure to their inspired example.

Robert Pigford did not enjoy the many administrative chores his position implied, but he dealt with them forthrightly.
Several of his colleagues remember his unique manner of seeking advice on major administrative issues. All faculty offices, in those long ago days in Brown Laboratory, were along one corridor: the chairman's at one end and the most recently appointed assistant professor at the other. Robert Pigford simply gathered any papers necessary for a discussion of the issue in one hand and, with a pad and pencil in the other, proceeded to interview each faculty colleague in turn. When he came to the end of the hallway, perhaps no more than thirty minutes later, he had all the information he needed for an informed decision—and none of his colleagues were diverted from their activities for more than a few minutes each. How nostalgically one looks back upon such a straightforward procedure in these days of excessive committee responsibilities! Once, when this procedure was described to a faculty friend from another department, the latter queried "How could you be sure he would accept your advice?" We who were his friends were speechless: this was simply an unthinkable occurrence in the Pigford department. Of course he would accept advice if he requested it; his generosity of spirit was such that chthonian machinations between him and his colleagues were simply unthinkable. His colleagues, in turn, were usually equally ready to grant him discretion in use of any advice he sought. Such indeed was the Pigford department: one administered by mutual altruism. And his vision for his university was that all departments would some day practice such altruism. Can there be a more beautiful vision?

Professionally, his department developed rapidly under his leadership to become one of the outstanding departments nationally. He was one of the earliest proponents of the use of computers in engineering and built several for both instruction and research before the widespread availability of such equipment. He was instrumental in establishing the computer center for the University of Delaware community and in the establishment of a graduate program in metallurgy and materials science.

Robert Pigford's advice was sought by numerous indus
trial, academic, and governmental institutions. He was deeply interested in, and concerned by, the ethical dimensions of science and technology and served much time on national committees devoted to clean air standards and to the safe disposal of nuclear wastes. In addition, from 1983 until his death Robert Pigford served as the gubernatorially appointed faculty representative on his university's board of trustees.

Robert Pigford received almost all the awards for leadership in research and education of his principal professional society, the American Institute of Chemical Engineers. On the occasion of its seventy-fifth anniversary, he was named as one of thirty foremost leaders of the chemical engineering profession. He was elected to the National Academy of Engineering in 1971 and the National Academy of Sciences in 1972—one of only a small number of scholars nationally to achieve this dual distinction. The university has recognized this distinction by bestowing on him the unique title of university professor in 1975 and by naming him as its first Alison scholar in 1977. In 1988 he was named Delaware's Engineer of the Year by the Delaware Society of Professional Engineers.

Robert Pigford was the founding editor of the journal *Industrial and Engineering Chemistry Fundamentals*, an activity to which he devoted a full quarter century. In 1965 he left Delaware to serve as a professor at the University of California, Berkeley; he returned ten years later.

To sum up, Robert Pigford lived the life of a most distinguished scholar and most unselfish, magnanimous leader, whose love for his university was so deep that he really lived for the day when all of it might function as serenely and effectively as his own department did when he was its chairman. To the extent that we who are here today achieve this, we are building the memorial to him he would wish to have. His unselfishness is perhaps best summed up in the words of the late Robert Perry, one of his earliest students: "A Prince among Men." We miss him.