ChE founder

North Carolina State's

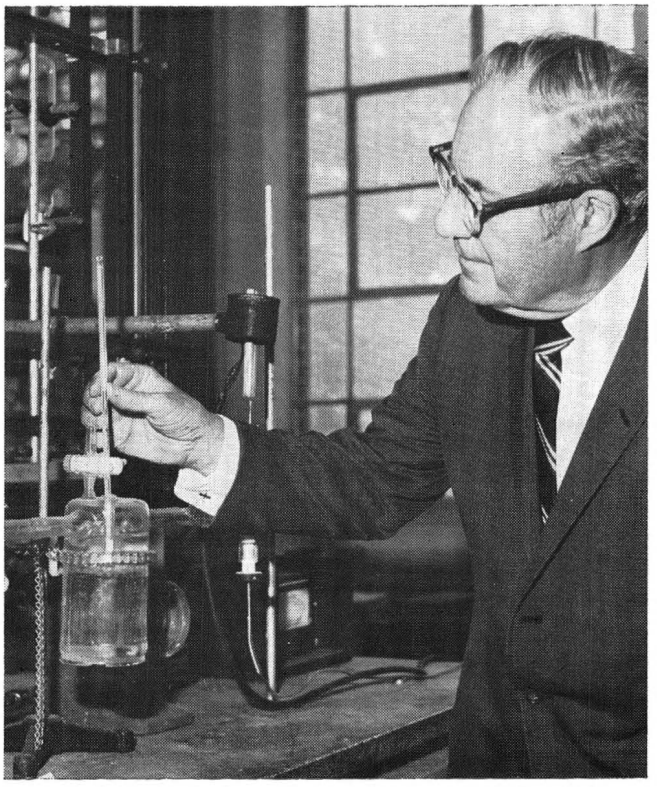
WARREN LEE McCABE

E. M. SCHOENBORN
North Carolina State University
Raleigh, N. C.

ASK A JUNIOR or senior chemical engineering student, or a process design engineer, for that matter, to identify the name "McCabe" and he will invariably call to mind one of the co-authors of the McCabe-Thiele graphical method for design of distillation columns. Ask another member of our profession the same question and he might recall that McCabe was among the first to call attention to the usefulness of the enthalpy—concentration diagram for binary solutions or the first to enunciate the ΔL law of crystal growth. Ask a contemporary and he will without doubt associate the name with one of the most distinguished chemical engineering educators, researchers, authors, and administrators of the last generation.

Born just before the turn of the century in Bay City, Michigan, Warren Lee McCabe was early strongly attracted by science and engineering. That chemical engineering might offer promise of a fruitful career was confirmed when young McCabe, just out of high school, took a job as a chemist's assistant in a wood distillation plant that consisted of what was then a very modern, multi-column system for the production of methanol and acetone. It was here that his interest in the unit operations, especially in the stage-wise separation processes, was aroused.

At the University of Michigan the evolving unit operation concept was being taught by Walter L. Badger, Eugene H. Leslie, and Edwin M. Baker so that the time was ripe for the young student to become steeped in the new approach to analyzing process equipment. Upon completion of his B.S. and M.S. requirements, he accepted an instructorship at the Massachusetts Institute of Technology. Inspired and encouraged by such

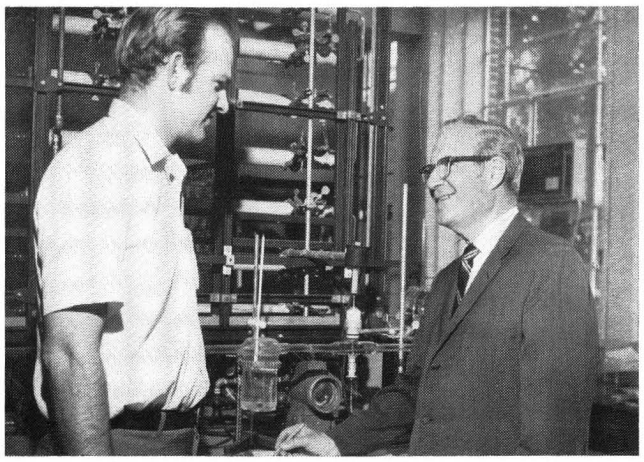


Dr. McCabe continues research on his first love—crystallization.

pioneers as W. K. Lewis, C. S. Robinson, W. H. McAdams and others, and with the close collaboration of another young student, Ernest W. Thiele, the concept and development of the now classical method of McCabe and Thiele evolved and was subsequently published.

Returning to Michigan for his Ph.D. and joining the ranks of the chemical engineering faculty there, Dr. McCabe rose rapidly through the ranks of Instructor to Associate Professor. Following ten years of fruitful service at Michigan, he accepted appointment as a full Professor and shortly thereafter became Head of the Department of Chemical Engineering at Carnegie Institute of Technology.

It was during his tenure at Michigan that he coauthored with W. L. Badger the eminently successful text: "Elements of Chemical Engineering," a book widely used for an entire generation by colleges and universities both here and abroad. Some years later, he made another significant contribution to the literature with "Unit Operations of Chemical Engineering," equally successful, whose authorship he this time shared with Professor J. C. Smith of Cornell University. Recognizing the need to keep abreast of a rapidly developing and expanding field, this definitive work



Dr. McCabe discusses a research problem with Professor R. W. Rousseau.

is presently undergoing a new, third revision. Chapters on Crystalization in Perry's "Chemical Engineers' Handbook" together with a long list of research publications covering a wide range of topics give evidence of the breadth and depth of Dr. McCabe's interests.

It is only natural and practically inevitable that so talented a person be sought out to help solve problems beyond the confines of the classroom and the laboratory. As a consultant to industry and government, as Vice President and Director of Research for the Flintcoke Company, as an advisor to educational institutions and more recently as Administrative Dean of the Polytechnic Institute of Brooklyn, Dr. McCabe has served his fellow man with great diligence and dedication.

Space does not permit an enumeration of his memberships and offices in numerous scientific and professional societies. That he was the recipient of the William H. Walker Award, the Founder's Award, and of the Tyler Award of the A.I.Ch.E., of the Distinguished Alumnus Award of the University of Michigan, and of the Golden Key Award with Admiral Arleigh Burke (one of his former students) gives some evidence of the high esteem in which he is held by all who have come to know him.

Upon retirement from Brooklyn Poly a few years ago he moved to Chapel Hill, North Carolina with his devoted wife, Lillian. Not content to bask in the light of his past accomplishments, he remains as active and vigorous as ever. Today he holds a Reynolds Professorship in Chemical Engineering at the North Carolina State University at Raleigh. He is teaching again using a new set of notes and supervises graduate research on his early love—crystallization. Indicative of his talent for creative investigation is the fact that he has within the past several years elucidated the phenomenon of contact nucleation, a significant piece of work that other workers in the field have hailed as being of great significance in describing the crystallization process. He is also writing and publishing again and, of course, when he has little else to do, he works on the third edition of his respected "Unit Operations."

WHERE DO WE GO FROM HERE?*

A Founder's View

WARREN L. McCABE
North Carolina State University
Raleigh, N. C.

ENGINEERING HAS JUST ended its most romantic era. During the past two decades, good engineering jobs have been available, salaries and working conditions good, money plentiful, public opinion of technology benign. Engineering tasks have been amenable to mathematical modeling of purely physical situations, and all the drudgery taken over by computers.

Suddenly, immediately after the successful completion of the most spectacular engineering effort of all time, this golden age ended with a suddenness that reminds me of the collapse of the euphoric Coolidge era in 1929. Once the human interest of the first moon shots was satisfied, people began to ask: "Just why did we do this, anyway?" It was recognized, paradoxically, that the space effort paralleled the rapid buildup of a set of severe social, racial, environmental, and conservational problems that were not being solved and which, superficially, seem to have originated as a consequence of the very success of our technology and from our ability to improve our material standard of living. The same engineers who were so successful in the space program have

*Remarks given at the Southern Regional Conference of A.I.Ch.E. Student Chapters, North Carolina State University, Raleigh, N.C. April 2, 1971.