

Engineering Education at Penn State: A Century in the Land-Grant Tradition. By MICHAEL BEZILLA. (University Park and London: The Pennsylvania State University Press, 1981. Pp. viii, 239. Preface, notes, appendixes, index. \$16.95.)

While Penn State has changed enormously since its earliest days when its principal aim was to teach "all things necessary to be known as a farmer," people continue to think of it as an agricultural institution. This lingering "cow-college" image is particularly disturbing to Michael Bezilla, since it tends to obscure the significant contributions such programs as those in engineering have been making at the school over the years.

As he reminds us, Penn State's involvement in engineering education actually began in 1863, when the Pennsylvania legislature named the college to be the recipient of money collected from the land sales provided for under the famous Morrill Act President Lincoln signed into law the previous year. By joining this federal land-grant college assistance program, Penn State was now obligated to provide instruction not only in agriculture but also in the "mechanic arts." Because of numerous difficulties at the fledgling school, viable options in technical education were not firmly in place until 1881 when degree programs in civil and mechanical engineering were first offered. Subsequent growth in these areas of study was rapid and by the turn of the century fully 70 percent of all students at the college were in the relatively new School of Engineering. Penn State was now ranked tenth in the nation in the number of undergraduate students registered in engineering. In 1906 the school became perhaps the first to offer a degree in sanitary engineering. The Department of Electrical Engineering experienced such remarkable expansion that in the early 1920s it was the biggest such department in any American college or university. Growth in research kept pace so that at mid-century the dollar value of its research contracts was the second largest of all of the nation's land-grant schools. Representative achievements such as these should certainly surprise those who have always thought of Penn State simply in terms of barns, experimental gardens, and soil analyses.

As striking as has been the growth of engineering at Penn State, Bezilla sees it as but a dimension of the even more dramatic story of the meteoric rise of Pennsylvania to its preeminence among the industrial centers of the world. Obviously, such economic growth could only have been possible if increasing numbers of technically trained people who were able to design, build, and maintain the new

and complex machines, factories, mills, power stations, and communication and transportation systems were available in the state. Penn State accepted this challenge and over the past century awarded no fewer than 23,000 baccalaureate degrees, 2,500 graduate degrees, and 11,000 associate degrees in the various fields of engineering. Because of these heroic efforts, Penn State understandably became the largest collegiate source of professional engineers in the commonwealth.

Specifically, *Engineering Education at Penn State* traces in graphic detail the story of just how the educators at this land-grant institution went about the business of teaching and researching in the disciplines of engineering. With sensitivity and thoroughness, Bezilla chronicles the way these "unsung heroes" faced such important issues as those related to public support, academic purpose, instructional methodologies, physical facilities, research priorities, and community service. In a real sense their success in dealing with such continuing challenges explains the emergence of the Pennsylvania State University as one of the important centers of engineering study and research in the country today.

As Pennsylvanians continue to make public policy decisions about their system of higher education, they, of course, should be well informed of the critically important contributions these colleges and universities have been making to the state's economic and social life. By bringing to light the remarkable achievements Penn State has made in engineering education, Michael Bezilla helps us to understand better the indispensable roles such academic programs play in maintaining and improving the technological and industrial systems upon which our modern world rests.

School of Education
University of Pittsburgh
Pittsburgh, Pennsylvania

RICHARD K. SECKINGER

The Mountain, the Miner, and the Lord, and Other Tales from a Country Law Office. By HARRY M. CAUDILL. (Lexington: University Press of Kentucky, 1980. Pp. xii, 177. Preface. \$12.50.)

The life of the average folk of Appalachia emerges from the pages of Caudill's volume in a way which purveys both the joys and the pathos of mountain life. This anthology of stories about the people of Appalachia presents vignettes of life in the author's native Letcher County, Kentucky.