Fred Hoffman Rhodes

June 30, 1889 — November 30, 1976

Fred Hoffman "Dusty" Rhodes, affectionately known as the father of chemical engineering at Cornell, died November 30, 1976, in De Land, Florida. He was born on June 30, 1889, in Rochester, Indiana, where he completed his elementary education, graduating from high school in 1906. He then entered Wabash College, where he majored in chemistry, also acting as an English instructor in his senior year. Apparently this was the start of his interest in perfection in writing that later plagued many Cornell chemical engineering students but proved to be a great help to them in their professional careers.

The Cornell Department of Chemistry needed an assistant in qualitative analysis in February 1910. Dusty accepted the job, although he had never had qualitative analysis at Wabash. He later became a personal research assistant to Louis Dennis, the head of the Department of Chemistry for many years.

After receiving his Ph.D. degree from Cornell in 1914, he went to the University of Montana for a year to teach chemistry and metallurgy. In 1915 he returned to Cornell as an instructor in qualitative analysis, the course he had never taken. After two years he decided that he needed industrial experience, and from 1917 to 1920 he worked for the Barrett Company, starting out as a research chemist and ending up as director of research. In this period he contributed to some of the developments that became the foundation of chemical engineering. He returned to Ithaca and Cornell in 1920 as a professor of industrial chemistry. At this time, Professor Dennis was buying equipment in Europe for Baker Laboratory, which was then under construction, leaving Dusty with instructions to buy some equipment that might be suitable for industrial chemistry. When Dennis returned, he found that some of the equipment that had been installed in the basement of Baker Laboratory was curiously similar to that found in chemical engineering laboratories. For the next ten years there is no documented evidence that chemical engineering as such at Cornell was anything but a figment of Dusty's imagination. During this period, however, Cornell graduated many bachelors of chemistry, who later turned out to be some of the outstanding leaders of the chemical industry. It was also during this period that Dusty published a number of articles covering such things as soaps, lubricating oils and greases, phenol, and paints. Interspersed among them were research papers on unit operations. In the worst part of the depression he finally convinced the faculty there was such a thing as a chemical engineer, at least to the extent that they agreed the degree of chemical engineer would be granted to any bachelor of chemistry who completed a fifth year under Dusty's direction. In 1933 the first class of three chemical engineers was graduated.

In 1938, the School of Chemical Engineering was created as a separate school in the College of Engineering with an integrated five-year course reading towards the degree of bachelor of chemical Engineering. At this time the school's faculty consisted of Rhodes and an assistant professor, with an occasional instructor when one could be found who would work hard enough to meet Dusty's standards. The official faculty, however, included two other engineers and two chemists carefully chosen so that faculty policies did not conflict with those of Professor Rhodes. This proved to be very satisfactory, and before long it became unnecessary to hold faculty meetings.

Since Dusty had achieved his objective and had created a separate School of Chemical Engineering, the next step involved obtaining a suitable building to house the school. Fortunately, S. C. Hollister, the dean of the College of Engineering at that time, proved an able and willing coworker in obtaining a chemical engineering building, which was to be the first unit of the new engineering quadrangle. In 1940, Franklin W. Olin donated the funds for Olin Hall, and construction was started early in 1941. The new Olin Hall of Chemical Engineering was first used in May of 1942, and Dusty was named the first Herbert Fisk Johnson Professor of Industrial Chemistry.

During the World War II period, in addition to a heavy twelve-month teaching load, Rhodes served in the Office of Production Research and Development, under the War Production Board. He was also developing staff, facuities, and a curriculum for metallurgical engineering, a new discipline for Cornell, and a bachelor's degree program was started in 1947. The school then became the School of Chemical and Metallurgical Engineering until 1963, when metallurgical engineering was combined with materials science. In addition, Dusty was elected a director of the former German firm, the General Aniline and Film Corporation, a post he held for nearly ten years. The influx of veterans after the war caused a critical housing shortage for Cornell, threatening to lower the number of chemical engineering students, so Dusty provided rooms for twenty in Olin Hall under strict rules to govern their behavior.

Dusty officially retired July 1, 1957, after a year's terminal sabbatic leave (the only one he ever took) to "go fishing." He then proceeded to write a history of the chemistry department and the chemical engineering school and was elected an alumni trustee for a five-year term. Shortly afterwards, the Cornell Alumni Association voted that all candidates for this position must have been a Cornell undergraduate, which Dusty was not.

Dusty, above all, insisted his chemical engineering students be given the best possible chance to achieve the competence needed to further their careers. He required excellence in teaching; he helped provide facilities and financial support for the school and for chemical engineering students; he strongly resisted interference by outsiders and had the personality to succeed in these endeavors. Dale R. Corson, president of Cornell University and former dean of engineering, made the following comments:

"Dusty Rhodes was himself no ordinary person, and he wanted extraordinary individuals as students. He wanted to teach and train superior engineers. With a humanity covered with a veneer of gruffness and mild chicanery, he built the curriculum and the program, forced his students to superior work, and then assured them of positions of status in the profession. He fought for his students, he supported them, and he defended them against incursions from alien beings. He continued to be concerned about them when they left Olin Hall. His continued interest in the fate and fortunes of chemical and metallurgical engineering alumni is well documented."

About a year before Rhodes retired, a small group of his former students and Professor Winding of the School of Chemical Engineering, formed a committee to attempt to raise enough money from the then approximately seven hundred chemical engineering alumni to endow a chemical engineering professorship in Rhodes's name. It was an ambitious undertaking for such a small group, but by 1970 well over a half million dollars was accumulated, almost all of it from Dusty's former students. In 1971 the Fred Hoffman Rhodes Professorship in Chemical Engineering was established. Dusty was very pleased when one of his students, Professor Peter Harriott, was made the first holder of this professorship. The professorship is a fitting tribute to an extraordinary person, an example of the affection and high regard extended by his students.

He is survived by his widow, Ethel, of De Land, Florida, and a daughter, Clara Rhodes Rosevear of Toronto.

Peter Harriott, Franklin A. Long, Julian C. Smith, Charles C. Winding