

*Ralph Peck*of Illinois
Tech

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BORN IN WINTER to American parents on a ranch in the province of Saskatchewan when it was still a frontier area, Ralph Peck, Professor of Chemical Engineering at Illinois Institute of Technology, spent his early days acclimating himself to the hardships of farm life. When he was two, his father died and left his mother with Ralph and his older brother, Benajhar, with the responsibility of managing their homestead.

His mother remarried when Ralph was nine and he helped trail the family horses when the family relocated in Alberta. An old German settler they met along the way sternly lectured Ralph about his being out of school and the importance of education. The young boy followed the advice, rising early to ride a horse to the one-room school house. He and his brother later went to the high school twelve miles away, living together in a one-room shack during the week, taking care of horses and milking a cow for board, and returning to the farm on weekends to help. These early rigors left Ralph with a zest for outdoor life and an incentive to escape the hard farm life in the north. It also left him with a love of gardening and a skill in cooking which still persist.

EDUCATION IN MINNESOTA

BECAUSE OF STRONG ties to his father's relatives in Minnesota, where his parents originated, the young brothers migrated in 1928 to the University of Minnesota for their college education. An advisor steered Ralph from chemistry into ChE as a field that was just opening up. An aunt sponsored his application for citizenship and became his guardian. His uncle helped him get summer jobs at the Cremet macaroni plant, giving young Ralph an early introduction to the food processing industry and the drying problems which were to become a major thrust of his future research.

Ralph received his BScChE degree with distinction in 1932 and, with drought and depression in Canada, stayed on for graduate work in chemistry and mathematics at Minnesota. As a graduate assistant, he collected radon for the famed F. H. MacDougall, whose physical chemistry book was an early classic, and initiated his long-standing interest in thermodynamics as a teaching assistant in the course.

Peck studied electrical conductivity and dielectric constant with George Glockler as his advisor, resulting in several publications and the PhD in 1936. The famed chemist Melvin Calvin was a labmate and another Minnesota friend, Ed Piret, was an usher when Ralph married Joyce Mullen, who had spent the summer typing his thesis. The wedding was moved up to August so Ralph could accept a job as instructor at Drexel

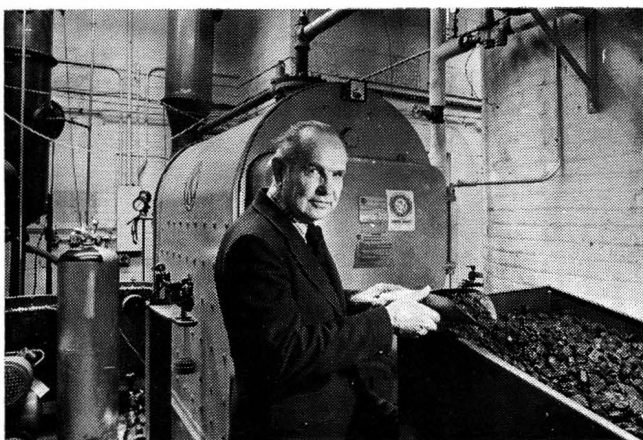
Institute of Technology. To his amazement he was turned down on application for final citizenship papers on the grounds that he was already a U.S. citizen because of his parentage.

When the Pecks arrived in Philadelphia, Department Head Henry Rushton, who had hired him, had moved on. Ralph worked with the late Henry Ward, who became Department Head at Kansas State University, and the late Harding Bliss. Among his students at Drexel were Vince Uhl and Ralph Troupe, who loved to challenge him with unusual problems.

BEGINNING THE IIT YEARS

THE PECKS WOULD usually spend their summers travelling and camping. In 1939, they went to a meeting at Penn State where Ralph was hired by Dean Linton Grintner and President Henry T. Heald (later the head of the Ford Foundation) of Armour Tech, which later became IIT. He was to work as an instructor for the ChE department founded and headed by Harry McCormack [1]. They continued their trip around the country and into Mexico and came to Chicago, which has been their home, except for visits abroad.

A summer course taught by visiting professor Barney Dodge rekindled his interest in thermodynamics. It was during this period when Peck began supervision of 100 Master's and 32 PhD dissertations. Ralph was promoted to Assistant Professor in 1941 and spent the war years working on the freeze drying of foods and spray drying of blood plasma. His principle interests developed in heat transfer, thermodynamics, kinetics and reactor design, and energy conversion, and these persist to the present. His students always found



Ralph Peck was co-inventor of the coal/sulfur abatement/fertilizer process.

him available for technical or personal assistance, both in his open-doored office and at home.

It was in this period that he began his long and productive associations with other institutions on the IIT campus, the IIT Research Institute and the Institute of Gas Technology, and developed his numerous industrial consulting activities. This consulting lead him into studying the drying of abaca fiber of Costa Rica as a substitute for hemp for rope, drying of fertilizer and foodstuffs, storage of liquidified gases, and the gasification of coal, and many other problems. Although much of Peck's published work has a fundamental nature, it invariably arose from the need to solve real problems.

In 1944 he was advanced to Associate Professor and, in 1950, his contributions were

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recognized by a full Professorship. In 1953 he assumed the Department Chairmanship (succeeding Henry Rushton who left for Purdue after a 7-year stint as Chairman), a post he held until 1967 [1].

PECK IN INDIA

IT WAS ONE of the first American schools to welcome students from India who came on government grants, and a large number of students came in the 40's and the flow continues to date. The Pecks welcomed students into their home, with special emphasis on those left on campus during holidays. Baseball games, with participation by those playing for the first time, have become legendary.

Because of his many Indian friends and as an outgrowth of the partition of India, he was invited in 1959 to spend a year helping set up a ChE department, using funds from U.S. wheat loans, at Punjab University in the beautiful new city of Chandigar, north of New Delhi. The Pecks, including sons Keith and Bruce and daughter Gail, travelled extensively throughout India with Ralph, who made a survey of all engineering schools in the country. While they were in Calcutta, they were hosted by a former

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student who Ralph had reluctantly flunked out of IIT. That student, now a millionaire business man, was grateful for being steered out of a profession not making the best use of his talents.

Ralph's frontier heritage showed when he bagged an antelope on a hunting trip and dressed and butchered the carcass, storing the meat temporarily in the ChE department freezer. While Ralph was preceding, by way of the Orient, the family's return to Chicago, his eldest son Keith was killed in a tragic accident. The family received extraordinary assistance from the U.S. government in locating Ralph and returning the body.

ISRAEL VISIT

BECAUSE THE DEPARTMENT had run so well under acting chairman Bernie Swanson, Peck accepted the invitation of Bill Resnick, head of the ChE department at Israel's Technion (and former IIT professor), to introduce Ralph's unique teaching style to the Israelis in the 1962-63 school year. One of the highlights of this style is the abundant use of the ten-minute "drop quiz," accompanied by a laugh as a challenge to the students. He surmounted the language barrier by use of a translator.

During this year the Pecks camped from the Arctic Circle to the Red Sea and contemplated the probability of bumping into former student Bob Miller while photographing the Champs de Elysee. In addition to a productive year of teaching and research, working with David Hasson, Dan Luss (then a graduate student) and Sam Seidman, Ralph was asked by the Israel Ministry of Development to review various desalination processes, including the controversial Zarkin freezing process.

DIVERSE RESEARCH INTERESTS

RESearch HAS ALWAYS been a means rather than an end for Peck. His list of over forty journal publications is marked by the diversity of subject matter. Signs of his practical bent are the three patents which have issued in

his name. His scholarly writing activities includes a review of drying with D. T. Wasan in the "Advances in Chemical Engineering" series and he is currently preparing the section on drying for John McKetta's new "Encyclopedia of Chemical Processing and Design."

Even as he approaches formal retirement, he currently has several studies supported by grants from a variety of agencies. The National Science Foundation is supporting a study of the kinetics of Methanation while the Illinois Institute for Environmental Quality sponsors coal combustion research.

A recent activity arising from his consulting work was the invention, with former student Ladd Pircon, of a process for removing the particulate and sulfur pollutants from burning high-sulfur Illinois (or other) coal and converting these pollutants into useful fertilizer, instead of the usual nonnewtonian sludge. This process, which is in the pilot-plant stage, has attracted considerable attention in the popular and professional press and was featured on a TV program. The development of this process emphasizes the importance of ChE roots in chemistry and, as Ralph often cautions, the process comes first—followed by analysis, rather than the converse.



A Product of Peck's Puddle.

TEACHING ACTIVITIES

RALPH PECK'S devotion to research has never come at the expense of his teaching. In 1973 he received IIT's annual Excellence in Teaching Award. In addition, he was given the ASEE Western Electric Fund Award for teaching excellence for 1975-76.

Along with his university teaching, he has participated in industrial short courses in drying

theory and technology and, in the summer of 1972, taught a drying course at the University of Sao Paulo, Brazil. In 1976 he taught in Algeria as part of a team from the Institute of Gas Technology.

A list of the students whose dissertations he supervised would include many well-known names from the academic, industrial and government sectors. Peck is a Fellow of AIChE and active member of ACS, ASEE, Phi Lambda Upsilon and Sigma Xi. He has organized and chaired many symposia on drying at national society meetings.

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ONE OF THE MOST important strengths of the Peck family is their annual trip to their summer home in the wilds of northern Minnesota. Except for trips abroad, all teaching and consulting work comes to a halt at the end of the spring semester. Originally acquired by Ralph's geologist brother as payment for the brother's services, the Pecks became owners of 40 acres, and the cabin they built together with Benajhar, when the brother's career took him to the southern U.S. They acquired 40 more acres in 1949 and the lake on the property, dubbed Peck's Puddle in fun, is so listed on Geological Survey maps.

Then the cabin burned down in 1962, the family later rebuilt it by hand, except for a bulldozer and "redimix" concrete. It now contains most civilized comforts, with the notable exception of a telephone. Avoiding the temptations of more work, Ralph is an avid fisherman, boater, swimmer, and gardener. He credits this annual break with his professional activities in keeping him fresh the rest of the year (renewal theory?). The family has now been augmented by Bruce's wife Barbara and Gail Green's husband Jeff and the three grandchildren, Kelly, Kristi and Jason.

COMMUNITY ACTIVITIES

SUPERIMPOSED ON his professional activities, Ralph has always found time for community involvement. Although he is not religious,

Ph.D. Students

Bakshy, Stanley	Linden, Henry R.
Bloomer, Oscar T.	Lokay, Joseph D.
Carr, Norman L.	Marek, Cecil J.
Chase, Curtis Alden, Jr.	Rai, Charanjit
Clauson, Warren S.	Reddi, Mullapudi M.
Eakin, Betram E.	Ryant, Charles J. J.
Ellington, Rex T.	Sareen, Sarvajit S.
Fagan, Walter	Sheth, Narendra J.
Garud, B. S.	Smith, Neal D.
Gidaspow, Dimitri	Snow, Richard
Griffith, Russell T.	Staats, William R.
Hesson, James C.	Tavakoli-Attar, J.
Jee, Benny C.	Uno, Seiji
Kauh, Jae Y.	VonFredersdorff, Claus
Khoobiar, Sargis	Vyas, Kirit C.
Kisaukurek, Bilgin	Wagner, Edward F.

he is often involved in church-sponsored activities, such as the YMCA. He and Joyce have been long-term supporters of the Ada S. McKinley Community House in the ghetto area near IIT. They worked actively with the Gresham Community Council to welcome and help new neighbors when their neighborhood became racially mixed. The Pecks membership in the Ethical Humanist Society of Chicago lead to their early involvement in the nonviolent aspects of the peace movement. Ralph is an avid, and often unconventional, bridge player and the lunchtime games between brown-bagging faculty and graduate students have become part of IIT's legend. One of the authors (D. M.) remembers stalling a last hand to avoid a 10-minute quiz in Peck's after lunch Heat Transfer class, only to hear Peck announce a good problem he has thought up while waiting for the author to cover or duck a lead to the dummy. He will long remember Peck's cheerful public post mortem of how the author blew both the bridge hand and the quiz. □

REFERENCES

1. R. C. Kintner and D. T. Wasan, Chemical Engineering Department-Illinois Tech, Chem. Eng. Educ. 5 (3) 108 (1971).

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