

## Memorial of Charles Irvin Rich January 5, 1918–September 18, 1975

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Dr. Charles Irvin Rich, Distinguished University Professor (Agronomy, Soil Science, Mineralogy) at Virginia Polytechnical Institute and State University (V.P.I. and S.U.), died after a long illness at age 57, September 18, 1975, at Blacksburg, Virginia. Dr. Rich was born January 5, 1918, at Rock Island, Illinois, received both his B.Sc. and Ph.D. degrees at the University of Wisconsin in 1940 and 1950, respectively, and his M.Sc. at V.P.I. in 1941. He studied at Massachusetts Institute of Technology and received the Certificate in Meteorology (Army Air Corps Program) in 1942 and served as meteorologist officer with the U.S. Air Force during World War II, 1942–1945. He served in the Soil Conservation Service, U.S.D.A., as Soil Technologist in 1941–1942 and as Soil Scientist (Soil Survey) 1945–1947. He was with V.P.I. and S.U., as Assistant Professor, 1947–1948; Associate Professor, 1950–1953; Professor, 1953–1970; and University Professor, 1970–1975, being one of six persons originally so honored when the university first established this recognition for a limited number (less than 1%) of outstanding educators.

Dr. Rich was widely recognized both nationally and internationally for his research accomplishments in the areas of clay mineralogy, soil chemistry, and soil-plant relationships. He authored and coauthored more than 60 technical papers, and co-edited the book *Soil Clay Mineralogy*, resulting from the NSF-sponsored month-long seminar on soil clay mineralogy in 1962 under the sponsorship of the Southern Regional Educational Board. He also wrote a number of chapters in significant books, including *Advances in Agronomy* (12, 1960), *Methods of Soil Analysis* (Agron. 9, C. A. Black, ed., 1965), *The Role of Potassium in Agriculture* (V. J. Kilmer *et al.*, ed., 1968), *Mineralogy in Soil Science and Engineering* (SSSA, Spec. Pub. 3, 1968). A complete list of Dr. Rich's publications is available from the Business



Office.<sup>1</sup> The insight of his teachings and advice in his chosen field greatly influenced many students, research associates from many countries, and his professional colleagues. Understanding of the mineralogy of soils of the southeastern region of the U.S.A. was greatly advanced by his encouragement, assistance, and leadership. He was editor of a resulting regional bulletin on soil clays of the region in 1958.

<sup>1</sup> To obtain a copy of this list order document AM-77-044 from the Business Office, Mineralogical Society of America, 1909 K Street, N.W., Washington, D.C. 20006. Please remit \$1.00 in advance for the microfiche.

Dr. Rich was first to identify, in red-yellow podzolic soils of south-eastern U.S.A., chloritized (hydroxy aluminum interlayered) dioctohedral vermiculite, formed from both muscovite and paragonite. He showed the importance of this mineral in fixation of phosphorus, non-fixation of potassium, the acceleration of interchange reactions between ammonium and potassium, and the unusually high lime requirement of soils in which this clay occurs. He contributed to flame-emission analytical methodology for magnesium and potassium, several advances in X-ray diffraction of clays, cation exchange capacity determinations for clays and soils, fluoride extraction of hydroxy aluminum interlayers from chloritic vermiculite, and high-resolution electron microscopy of muscovite and its Ba-exchanged by-product.

He was named Fellow in both the American Society of Agronomy-Soil Science Society of America (S.S.S.A.) and the Mineralogical Society of America. During 1965-1966 he was Visiting Professor at Purdue University, Department of Agronomy. He served as guest lecturer at many international scientific meetings throughout the world. He was a mem-

ber of the International Soil Science Society, and the International Association for Study of Clays. He was listed in *Outstanding Educators of America for 1970* (also . . . for 1975), and was elected to the honorary societies of Phi Kappa Phi, Sigma Xi, Alpha Zeta, and Gamma Sigma Delta. He served as president and executive secretary to the V.P.I. and S.U. Chapter of Sigma Xi and was president-elect of that Chapter of Gamma Sigma Delta in 1974-1975.

Dr. Rich served in the Soil Science Society of America as Committee Chairman for the Soil Chemistry Division, and the Terminology, Soil Mineralogy, and Methods of Analysis Committees; as Associate Editor of the *S.S.S.A. Proceedings*, 1960-1966; as Representative, Earth Science Committee, NAS-NRC, 1965-1967; and as Society President in 1969-1970. He served on the Committee on Nominations of Fellows for the American Society of Agronomy, and as secretary of the Clay Mineral Society during 1971-1974 and Society representative to the SSSA. Dr. Rich's warm friendship and counsel will be missed not only by his family but also by his many, many friends in several fields of science.