
JOURNAL OF THE AMERICAN CHEMICAL SOCIETY

(Registered in U. S. Patent Office) (© Copyright, 1962, by the American Chemical Society)

VOLUME 84

DECEMBER 20, 1962

NUMBER 23

EDGAR CLAY BRITTON

1891-1962

Edgar Clay Britton, the son of Joseph Albert and Bertha Elizabeth (Hirschbrunner) Britton, was born in Rockville, Indiana, October 25, 1891, and died in Midland, Michigan, July 31, 1962. His father had practiced law in Kansas before he settled in Rockville where he became a builder of covered bridges. Edgar, in addition to earning money by selling newspapers, helped in the construction of six of the twenty bridges that his father built. He taught in the Indiana grade school system for two years, waited on table, and clerked in a clothing store in order to pay for his college education. In an American Chemical Society interview, in connection with the awarding of the Perkin Medal in 1956, he related that on the train going to Wabash College in 1911 where he intended to take a pre-law course, he was advised by a Wabash upperclass chemistry major to interview Professor James B. Garner of the Chemistry Department. While Edgar had never had any previous interest in chemistry, he followed this suggestion, and was so much impressed by the opportunities outlined by Professor Garner that he entered the chemistry program. Three years later, when Professor Garner left Wabash College, Edgar transferred to the University of Michigan. There he became associated with Professor William J. Hale under whose direction he carried on some senior research and then the research for his doctoral degree which was granted in 1918. During his graduate program he served as a teaching fellow in general chemistry courses. In the period 1918 to 1920 he was an instructor at the University of

Michigan. [The writer had the privilege of being one of his students and well remembers the large red splotch on one of the sleeves of the gray suit coat that he put on before going to class. He had made the mistake of wearing this coat out into the laboratory where one of the students splashed a "Prep" over his arm.] In teaching, Dr. Britton showed the same degree of completeness that characterized his later work and the balancing of equations was a requirement in all student reports.

In 1920, Dr. Britton left the educational field and joined Dr. Hale as the second man of the organic research staff of the Dow Chemical Company. After twelve years as a research chemist for the organization, he became Director of the Organic Chemistry Laboratory and continued in that capacity until his retirement in 1956, when he was appointed a research consultant on a company-wide basis. Certain of his more important contributions will be discussed later but for the present it may be pointed out that he was either sole or chief inventor of nearly all of the more than three hundred patents that carry his name. The Dow Chemical Company, Wabash College and The University of Michigan as well as the chemical profession have given specific recognition of his many contributions to chemistry. The large organic research laboratory in the Midland plant was named after him in 1953; an E. C. Britton Fellowship in Organic Chemistry at The University of Michigan was established by the Company about the same time; and since his death, a fund has been established by his friends and the Company to

support a scholarship for an outstanding upper-class chemistry major at Wabash College. The University of Michigan (1952) and Wabash College (1955) awarded honorary Doctor of Science degrees to him. His colleagues in the American Chemical Society chose him to be President-Elect in 1951 and he served as President in 1952. He was active in Society affairs for many years, serving as Councilor, Director-at-large, and among other committee appointments, chairman of the committee which sponsored revision of the constitution of the Society in 1948.

In 1956, Dr. Britton was selected to receive the Perkin Medal of the American Section, Society of Chemical Industry, the highest award in American Industrial Chemistry. This award was given because of his numerous contributions to industrial organic chemical development. In his Award lecture he described some of the problems which he considered to be his greatest achievements. Early in his research career he recognized the importance of completing an investigation; and throughout many of his expositions on research he points out his philosophy that the preparation of a small amount of material is not satisfactory, unless accompanied by a careful study of all by-products and the accounting for all chemicals that had been introduced. One of the outstanding examples of his approach was the development of the process for manufacturing phenols from aromatic halides and caustic. The study of the equilibrium involving diphenyl ethers, the nature of the by-products and uses for them had led to the manufacture of hundreds of chemicals used in plastics, weed-killers, insecticides, and other materials of great value to man.

Another major problem was in the realm of the silicones. Dr. Britton was one of the prime movers in the formation of the Dow Corning Corporation and served on its Board of Directors and as its Secretary from the time of its establishment. His contributions to the silicone field were notable. For example, Dow Corning employed his processes in making the first high-temperature silicone resin insulation for airplane engines, a major contribution to aviation, particularly military aviation in World War II.

Emulsion polymerization studies comprised an important part of his research activities. His insistence on thoroughness in studying all factors played a large part in the success that was attained in preparing emulsions of vinylidene chloride, vinyl chloride, and styrene. In describing this work, he pointed out the need for industry to carry on basic and fundamental research in areas where large amounts of their capital are invested. During the war, Dr. Britton and his research teams became interested in the preparation of butadiene and developed a catalyst which gave excellent yields of this material from butylene. Here, again, he emphasized the need for meticulous study of

operating conditions and similar factors, if a process were to be successful.

The last of the research fields which will be mentioned as having paramount interest to our subject was the preparation of eight essential aminoacids. [The writer remembers the enthusiasm and happiness with which Dr. Britton showed him a particularly pure and beautifully crystalline sample of methionine which had just been prepared.] The use of these aminoacids as food additives was predicted by Dr. Britton as soon as commercial processes for their manufacture reduces the present high cost of most of them.

One of Dr. Britton's very strong feelings regarding the place of the chemist is as follows: "I believe the chemist was put on this earth to provide materials for man's use. If every chemist had this thought in mind, be he teacher or researcher, and made it part of his idealism, our progress would be astounding." He, himself, was known among his associates as a working chemist, and during working hours could be found in one of his laboratories carrying on experiments personally. In addition to his belief in the principle of 100% accounting for all chemicals used in a reaction, he was a strong advocate of the policy of encouraging experimentation rather than emphasis on theory and mechanisms. Research chemists under his supervision were given considerable latitude in carrying out their work, and the evidence indicates that many new developments arose from this freedom. It was this kind of policy that led one of his associates to say that "Doc is not only a man's man but a chemist's chemist."

Dr. Britton's interest in chemical research continued through his years of retirement but at no time in his life did it lead him away from other activities. He listed his hobbies as hunting, fishing, conservation, golf and carpentry. This last hobby, probably an outgrowth of his early experience in building bridges, led him to build a five-room cabin in a hunting preserve about fifty miles north of Midland where he and his family could practice the first three hobbies listed.

His marriage to Grace Van Huss on June 29, 1916, terminated in divorce in 1937. Three children were born to this couple: Harold E., Joseph H., and Lennis G. On December 25, 1937, he married Mildred A. Proud, who survives him. Two children were born of this union, Linda Ann and Daniel E.

In addition to his membership in the American Chemical Society, Dr. Britton was a Fellow of the American Institute of Chemists, and of the Society of Chemical Industry, and was a member of the American Association for the Advancement of Science, the Chemical Society (London), the Chemists Club (New York), Alpha Chi Sigma, Phi Lambda Upsilon and Sigma Xi. He was also active in the Midland Kiwanis Club, the Torch Club and the I.O.O.F.

LEIGH C. ANDERSON