

Vincent du Vigneaud

May 18, 1901 — December 11, 1978

Vincent du Vigneaud was born in Chicago in 1901. He majored in chemistry at the University of Illinois at Urbana and received the Master of Science degree in 1924. H. B. Lewis and W. C. Rose introduced him to biochemistry, which became his major field of interest. At Urbana he supported himself by working as a waiter and teaching cavalry tactics and equitation as a reserve second lieutenant. He received his Ph.D. degree in 1927 from the University of Rochester for work on the chemistry of insulin. Insulin is a protein containing sulfur, an atom that became his life-long center of interest, as vividly told in his book *A Trail of Research* (Cornell University Press, 1952).

For his postdoctoral work du Vigneaud moved to Baltimore with his wife, Zella, whom he had married in 1924, to work with J. J. Abel at Johns Hopkins. There, in the first steps following the sulfur trail, he worked on cystine, a constituent of insulin which Abel had crystallized in 1925. Du Vigneaud helped to establish that insulin is indeed a protein, an unpopular viewpoint at the time. After another year of postdoctoral fellowship in Europe, du Vigneaud returned to Urbana as an assistant professor in physiological chemistry (1930-32). He continued his work on cystine and developed an important method for the reduction of the disulfide bond by metallic sodium in liquid ammonia. These reagents remained valuable tools in his hand for his later synthetic work. In 1932, at age 31, he was appointed chairman of biochemistry at George Washington University School of Medicine, where he remained for six years. Here he broadened his research interest to include nutritional studies on cystine isomers and other sulfur-containing amino acids, particularly methionine and homocystine. He also began work on the synthesis of cystine peptides. Both of these new approaches laid the groundwork for du Vigneaud's later and most important work on amino-acid metabolism and peptide synthesis. In 1938 he moved to New York City as the head of biochemistry at Cornell Medical College. Once again he broadened his sphere of interest to include studies on the structure of biotin and pituitary hormones, keeping close to the tracks of the trail of sulfur atoms. At Cornell he established the metabolic process of transmethylation. He was helped in these fundamental studies by three collaborators, Mildred Cohn, Sofia Simmonds, and Joseph Chandler, who later became well-known biochemists in their own right. It is of interest that two of these collaborators were women, an unusual pattern at the time. During World War II, du Vigneaud worked on the chemistry and synthesis of the sulfur-containing antibiotic penicillin. In this work he was aided by a team that included Robert W. Holley. After the war he concentrated on the elucidation of the chemical structure of the pituitary hormones oxytocin and vasopressin. By 1953 the

chemical synthesis of oxytocin was achieved and its biological potency established. For this and earlier work on sulfur-containing biological molecules he received the Nobel Prize in Chemistry in 1955. In 1967 he moved to Ithaca where he was warmly welcomed by the chemistry department and remained active until the summer of 1974. His primary interest in Ithaca was the relationship between chemical structure and biological activity of oxytocin and vasopressin (which he had synthesized earlier).

On a Saturday morning during a conference with one of his postdoctoral fellows, he had his first stroke, which interrupted his brilliant career. It was a tragic end because he remained mentally alert but incapable of communication and physically feeble for several years until his death on December 11, 1978, in St. Agnes Hospital in White Plains, New York. Zella, his wife, who had attended him with love and devotion during his illness, died in 1977.

Du Vigneaud's most outstanding characteristic was his devotion to science and enthusiasm for research. When he retired as chairman of biochemistry in New York, instead of taking a vacation he moved to Ithaca on July 1 with two moving vans full of equipment and spent the summer "getting started." He set an exacting example for his colleagues by extending his work week through Saturday mornings and by designing laboratory work with meticulous care. He was a great listener and stimulated young scientists to greater efforts. He remained a father image to many brilliant scientists, now leaders in the field of biochemistry.

Du Vigneaud received many awards, both before and after the Nobel Prize, including the Lasker Award in 1948, the Passano Award in 1955, and honorary degrees from several universities.

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