



## Carl Robert Noller

November 10, 1900 - October 20, 1980

Carl Robert Noller, one of the early members of the Board of *Organic Syntheses* and Editor-in-Chief of Volume 15, died at the age of 79 on October 20, 1980 at the Stanford Hospital after a heart attack followed by open heart surgery.

His close colleagues at Stanford University, Professors William A. Bonner, Richard H. Eastman, and Harry S. Mosher write about him as follows.

"Carl was born November 10, 1900 in St. Louis, Missouri. His father, a wagon maker, and his mother, maiden name Laessig, were of German descent. He grew up in St. Louis and obtained his B.S. and M.S. degrees, 1922 and 1923, at Washington University in St. Louis and his Ph. D. degree, 1926, under professor Roger Adams at the University of Illinois. After being an instructor at Northwestern University in 1926-1927 with Frank Whitmore, he spent two years with Eastman Kodak Company in Rochester; then in 1929 he accepted an appointment as Assistant Professor at Stanford. He was awarded a Guggenheim fellowship for six months' study in Munich and Zurich in 1933. During the academic year of 1938-1939, he was a Visiting Lecturer at Harvard."

"Professor Noller was most widely known for his textbooks in organic chemistry. His text for majors, *Chemistry of Organic Compounds*, was first published in 1951, followed by second and third editions in 1957 and 1965. There were also two shorter versions, his *Textbook of Organic Compounds* (also three editions) and *Structure and Properties of Organic Compounds*. Approximately 10,000 Stanford students between 1951 and 1970 were introduced to organic chemistry through his books. His texts were rapidly adopted for the organic chemistry courses in a large number of universities in the United States. These books held their favored position for many years. They were recognized internationally by editions in Spanish (Argentine and Mexican editions), Chinese (Asian edition), Yugoslavian, and German. Noller's was the first text to embrace modern molecular orbital treatment of chemical bonding. This had an immediate and worldwide impact on the teaching of organic chemistry. His majors text

included a wide range of examples of industrial products and processes. By use of special topics chapters and generous footnotes, this volume was encyclopedic in its scope. Because of these features and the meticulously prepared index, it also served as a major reference work and is still widely used for this purpose. These texts have served his students and colleagues as models of clarity, factual integrity, nomenclature, and style for scientific writing. . . ."

"Professor Noller co-authored over one hundred scientific papers with his students. The subjects of these studies evolved over the years, but the central theme interwoven into his broad-ranging research endeavors was the investigation of natural products of plant origin. This interest began with his Ph.D. thesis problem, which dealt with the proof of structure and synthesis of chaulmoogric acid, a substance isolated from chaulmoogra oil which was being used at that time as a topical treatment for leprosy. Subsequent studies included the first total synthesis of oleic and claidic acids and the isolation of erucic acid from rapeseed oil. Noller then undertook investigations in the areas of steroidal sapogenins and triterpenes. His final major research effort in the natural product field was the investigation of the toxic, bitter constituent of manroot (*Echmocystis fabracea*), a member of the gourd family that was "mined" by Carl and his students along the banks of San Francisquito Creek. Extracts of this plant reportedly were used by the Californian Indians as fish poisons. The active component proved to be the cucurbitacins, which are both chemically and pharmacologically most interesting. They have highly oxygenated steroid-like structures but lack the angular methyl group at C-10 common to other steroids. His interest in the chemistry of plant products and in gardening led Professor Noller to become an amateur botanist with a broad knowledge of the scientific names of the local flora. Along with this natural product research, he and his students conducted experiments on the nature of the Grignard reagent; the mechanism of the Friedel-Crafts reaction, ozonolysis, and catalytic reduction reactions; basic problems in stereochemistry; the synthesis of pyridine and piperidine derivatives; and the use of zinc alkyls, mercury alkyls, and phosphate esters in organic synthesis. He also published several articles on effective lecture demonstrations, especially in the area of stereochemistry."

In addition to his impact internationally on science and education through his textbooks and research publications, Carl Noller played an important domestic role as an educator and scholar. He is remembered particularly for the very high standards of performance he demanded of himself as well as of his students. His intolerance of unscientific thinking and sloppy work was strongly influential in establishing a no-nonsense attitude of scholarly integrity which prevailed in the Stanford Chemistry Department.

William S. Johnson  
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