

Obituary



Carolien MacGillavry
1904–1993

Carolien MacGillavry passed away on Sunday, May 9, 1993 at the age of 89. She was one of the pioneers in the Dutch school of crystallography who introduced the application of several novel methods in The Netherlands. Under her guidance, almost 30 PhD students completed their studies. She excelled in solving complicated crystal structures at a time when such analyses were by no means routine. As a student, I was greatly impressed by her ability to read heavy-atom coordinates directly from the intensity variations on a Weissenberg photograph. At that time, Fourier summations were performed manually with the aid of Beever–Lipson strips and heavy atoms were usually essential. Her work on the relation between chemical structure, crystal structure and lattice energy of linear alkyldicarboxylic acids (of which the even members have the higher melting points) is one of the first systematic studies in the now very important field of the relation between crystal packing and physical properties. In addition to her scientific accomplishments, MacGillavry

distinguished herself in setting an example for her students and the many postdoctorals who found a scientific home in her laboratory, where the atmosphere was relaxed, the distance between Professor and students non-existent and many lifelong friendships were born.

Carolien MacGillavry studied Chemistry at the Municipal University of Amsterdam and received her doctor's degree in 1937 with Smits with a thesis describing the structure of twinned crystallites of $\text{Hg}(\text{NH}_3)_2\text{Cl}_2$ based on powder data collected at several temperatures. After the completion of her studies, she became Bijvoet's assistant. She succeeded Bijvoet in Amsterdam as Head of the Crystallographic Laboratory when he accepted a Chair at the University of Utrecht in 1939. In 1950, she was appointed Professor at the University, a post she occupied until her retirement in 1972. During this period, her laboratory became a national and international center. Through joint interests, including a collaboration on the structure of succinic acid just

before the start of World War II, she became a personal friend of Kathleen Lonsdale, who several times visited the laboratory. She belonged to the group that established the International Union of Crystallography in the 1946–1948 period and had close relations with both Patterson and Fankuchen. She was a member of the IUCr Executive Committee from 1954 to 1960 and with G. D. Rieck co-edited Volume III, *Physical and Chemical Tables*, of *International Tables for X-ray Crystallography*. The tabulation of atomic scattering factors calculated under her guidance became one of the most cited publications in the crystallographic literature.

In 1960, MacGillavry invited the Dutch graphic artist M. C. Escher to display his lithographs at the IUCr Congress in Cambridge. Needless to say, the intriguingly symmetric patterns of the then relatively unknown artist were a great success. In 1965, she published the book *Symmetry Aspects of M. C. Escher's Periodic Drawings*. In preparing the book, she noted that, while Escher made extensive use of color, one simple black and white plane group was

not represented in his drawings. Escher obliged and made a number of new drawings to fill the gap. Her interest in the connection between symmetry and art continued with a publication (in 1981 in the Proceedings of the Royal Dutch Academy of Sciences, of which she became, in 1950, the first female member and later was Secretary of the Division of Physics from 1961 to 1974) on the nature of a polyhedron in one of Dürer's famous engravings. In the opening lecture of the 10th Congress of the Union in Amsterdam, she drew a parallel between the order and beauty of the Dutch old cities and polder landscape and the regularity of snow crystals and images of crystal surfaces and dislocation patterns. MacGillavry remained active to an advanced age. Those who knew her will remember her fondly for her personal approach and for her great accomplishments.

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