

Geoffrey Rayner-Canham (1944 -) and Marelene Rayner-Canham (1942 -)



The winners of the HIST Award for Excellence in the History of Chemistry for 2023 are Marelene F. and Geoffrey W. Rayner-Canham for their work on the history of women in science, with particular focus on British female chemists.

Geoffrey Rayner-Canham was born and educated in England. He received his B.Sc. in Chemistry from the University of London in 1966, his Diploma of Imperial College (D. I. C.) from Imperial College in 1969, and his Ph.D. in Inorganic Chemistry (advisor Dr. Margaret Goodgame) from the University of London in 1969. He is currently Professor Emeritus at Grenfell Campus, Memorial University.

Marelene F. Rayner-Canham was also born and educated in England. She received her B.Sc. in General Science from the University of Waterloo, Ontario in 1986. She taught laboratory physics at the University of Newfoundland.

The saga that led to the HIST Award started in the 1980s when they noticed a remarkable Canadian woman, Harriet Brooks, while reading the classic work, *Discovery of the Elements* by Mary Elvira Weeks (and her final collaborator Henry

M. Leicester). The extensive research into her career resulted in the book: *Harriet Brooks – Pioneer Nuclear Scientist* (1992).

The research into the life and work on Harriet Brooks also revealed other neglected women scientists: Fanny Cook Gates, Ellen Gleditsch, Jadwiga Szmidt and May Sybil Leslie. This project resulted in the book: *A Devotion to their Science: Pioneer Women of Radioactivity* (1997). This was then followed with a more targeted focus on women in chemistry, which resulted in the book: *Women in Chemistry: Their Changing Roles from Alchemical Times to the Mid-Twentieth Century* (1998). Another major effort in this area produced: *Chemistry was Their Life: Pioneering British Women Chemists, 1880-1949* (2008). Lastly, the Rayner-Canham team was also a major contributor to the European project and book: *Women in their element: Selected women's contributions to the periodic system* (2019).

The Rayner-Canhams have published a large number of papers in the *Bulletin for the History of Chemistry*. A recent paper on a pioneering female crystallographer (*Bull. Hist. Chem.* **2021**, *46(1)*, 68-82, first page shown below) is typical in that it brings to our attention the life and achievements of a woman who deserves to be remembered, but who was forgotten prior to their investigation.

MARY “POLLY” PORTER (1886-1980): PIONEER WOMAN CRYSTALLOGRAPHER

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Introduction

In an Obituary for Nobel Laureate, Dorothy Crowfoot Hodgkin, it was stated that, for her fourth year undergraduate research project (1): “... she [Hodgkin] was anxious to return to crystallography. She was greatly encouraged in this by Dr Polly Porter, a Research Fellow at Somerville, who had worked for years measuring and cataloguing crystals.”

Hodgkin referred to Porter in a Public Lecture Hodgkin gave in 1979 titled “Crystallography and Chemistry in the First Hundred Years of Somerville College.” In that lecture, she elaborated upon her contact with Dr. Mary “Polly” Porter (2):

... I wavered little in my determination to do Crystallographic research for Part II Chemistry. ... So I talked it over with H. M. Powell and also with Polly Porter and agreed to begin in September. Before that Polly Porter had advised me to go to Germany, to work for a few months in the laboratory of old Professor Viktor Goldschmidt, a particular friend of hers. He

had designed a two-circle goniometer for measuring crystals—Polly bought one of these for Oxford—and also devised a good method of drawing crystals which I learned.

Yet Porter’s role as pioneer woman crystallographer has never been recognized. Here we will describe the unusual life-path and contributions of Mary “Polly” Winearls Porter, an individual who deserves remembrance—among many things—for being an extremely talented classical crystallographer before, and overlapping with, the era of X-ray crystallography.



Figure 1. Mary “Polly” Winearls Porter and her mother, Alice, from Wikimedia Commons (4).

Porter’s Early Years

Born in King’s Lynn, Norfolk, England, on 26 July 1886, Mary Winearls Porter (Figure 1), known by all as Polly Porter, was the daughter of Robert Percival Porter and Alice Porter (née Hobbins) (3). Polly had twin elder brothers, one of whom died young, plus two older step-brothers from her father’s first marriage. The family moved back to the United States when Polly was two years old. For most of his

A short Award biography cannot adequately present the importance of this work. The praise by the nominators can help put their accomplishments into perspective.

Anne Johnson, Ryerson University:

Geoff and Marelene should be recognized for the depth and breadth of their original research, which has often involved tracking down obscure sources, combing through school archives in attics, and reading lifetime correspondences in order to paint complete pictures of the lives of the women they researched. Their writing is remarkable in that it is engaging and easy to read. They have included quotes contemporary to their subjects to bring these forgotten women to life.

Eric Scerri, UCLA:

It is not just the comprehensiveness of their research, but also their delightful writing style which makes reading their work so appealing. Whatever the topic might be, the Rayner-Canhams find quotations, which provide a sense of contemporary personal experience in the context of the research topic.

Annette Lykknes, NTNU (Norwegian University of Science and Technology) and Brigitte Van Tiggelen, Science History Institute:

Indeed, Marelene and Geoff’s work has had an impact in the chemical community and beyond. Their successive publications (40 articles and contributions, and 8 books) and

numerous lectures have made chemists aware of events and actors in the development of their field [who] were mostly unknown. In particular, these have allowed more and more chemists, even those not particularly interested or versed in history to get to know more about female chemists from the past, in a language that was close to them. The fact that ACS commissioned the volume Women in chemistry mentioned above is an acknowledgement of this influence on the chemical community. The impact however goes far beyond, as Harriet Brooks about whom hardly anything was known in the sciences and absolutely nothing in the general public in the beginning of 90's is now a well-known figure in the history of Canadian women in Canada. This is an impressive achievement which also serves the inclusion of science in the national history and heritage as well as the multiplication of feminine figures that can be referred to as role-models for girls and women in science.