

book review

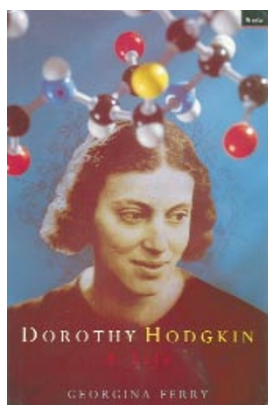
Full biography of Dorothy Hodgkin

Michael G. Rossmann

Dorothy Hodgkin: A life by Georgina Ferry. Published by Granta Books, 2/3 Hanover Yard, London, N1 8BE, UK; 1998. 423 pages, US \$29.95. ISBN 1-86207-167-5.

Georgina Ferry is not a scientist, nor did she ever meet Dorothy. Her principal qualifications for writing a biography of Dorothy Crowfoot Hodgkin are that she, like Dorothy before her, lives in Oxford and is clearly familiar with the Byzantine workings of the local university. Nevertheless, she has painted a portrait in words that is remarkably accurate. Many times, as I read her book, I imagined I could hear and see Dorothy as I knew her. Dorothy's incredible ability to organize three-dimensional features of crystal structures in her mind; Dorothy's humanity and concern for all those whom she met; Dorothy's unique personal approach to peace and disarmament; her rather chaotic household; her love for her husband, Thomas; and her ability to succeed in science without ever achieving a fully recognized position within Oxford University are all considered in the right balance and proportion. Even the science, described sometimes with excitement and occasionally to an extent that becomes a little tedious, has few errors. It is a remarkable achievement and clearly the result of a long and careful study. At the same time, the book is written in a nicely flowing, easy-to-read style, entirely consistent with Dorothy's natural humility.

Dorothy Crowfoot was born to English parents in Egypt in 1910. Her father was director of education in the Anglo-Egyptian-governed Sudan. Her parents were interested in the history and archeology of the Ancient World. They participated with equal vigor in the daily activities of their neighbors in the Sudan as they did for those in Beccles, their home town in East Anglia. Tutored by her mother and friends of the family, Dorothy gained entrance to Somerville College in Oxford at the age of 18. Although concentrating on chemistry, she retained an interest in the archeological activities of her parents. After graduation, she joined J. D. Bernal in Cambridge in his pioneering studies of biologically-important molecules. With Bernal, she not only learned to appreciate the quality of his exceptional scientific perception, but also reinforced her humanitarian and socialist views in a world that had barely recovered from the first World War but was experi-



encing the impact of the great depression. However, her previous mentors at Somerville made great efforts to attract her back to Oxford, requiring her to decide between the stimulating environment of Cambridge and a more secure financial and also apparently independent position at Oxford. Her scientific successes attracted progressively more financial support to provide her with essential X-ray and computing equipment to an extent that was previously unknown in Oxford, although she had no real University position. Her most well-known accomplishments were the determination of the three-dimensional chemical structures of penicillin in the 1940s, vitamin B₁₂ in the 1950s, and insulin in the 1960s. She was awarded the Nobel Prize in Chemistry in 1964.

Dorothy worked tirelessly for international understanding and disarmament. While finding herself to be president of the Pugwash Conferences on Science and World Affairs, as well as many other international organizations, her approach was uniquely personal. She initiated numerous bridges of friendship through the informal and international scientific community as many of her students gained recognition in their own right. Perhaps the best example is that of Margaret (Roberts) Thatcher who studied Chemistry with Dorothy. Unlike Thatcher, Dorothy's outlook was distinctly left wing. Yet, she managed to retain the respect of everyone, even those of different political backgrounds and beliefs, because of her sincerity and concern for the individual.

While China was completely isolated, to an extent difficult to comprehend in today's world of email and fax machines, a group of Chinese scientists had determined the structure of insulin. One of these scientists, Dongcai Liang, had worked with Dorothy. This, and maybe her well-known communist sympathies, made it possible for Dorothy to visit China and compare the Oxford and Chinese insulin structures to everybody's excited delight. She was then able to announce the incredible Chinese achievement to the Western World. She continued working for the advancement of Chinese science for the rest of her life, visiting Beijing for the last time in August of 1993, less than a year before her death.

Dorothy also had a similar impact on generations of scientists in countries as diverse as India, the former Soviet Union and Ghana, as well as the United States. For example, I attribute my own initial interest in proteins to lectures I heard Dorothy give, leading me to join Max Perutz and the wonderful informal education that awaited me in Cambridge.

While the Hodgkin biography is a magnificent success in recapitulating Dorothy's life, there are a few minor flaws. The author seems unaware that the many English terms she uses are not going to be understood by many readers who were not educated in Britain. A few examples are "going up" to Oxford, "reading" chemistry, digs, and 5/- (5 shillings, 1/4 of a Pound Sterling, with a purchasing power in the 1930s of maybe US \$25 in today's currency). A glossary would have been helpful, as would also family trees of the Crowfoot and Hodgkin families. But these are trivial irritations. This book should be read by the many modern structural biologists if they would like to obtain an impression of the history of their subject and an appreciation of the influence that one great but humble person had on the world around her.

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