Another strand to the DNA story

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The Third Man of the Double Helix
Maurice Wilkins
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The celebration of the 50-year anniversary of the discovery of the structure of DNA last year prompted many of those who are interested in the history of science to learn more about this event. Indeed, it has

become legendary not only because of its scientific importance but also because of the complex human interactions that led to this great revelation. So a new book on the subject entitled *The Third Man of the Double Helix* will certainly find many avid readers, especially as it is an autobiography of Maurice Wilkins, who shared the 1962 Nobel Prize with James Watson and Francis Crick. The elucidation of the DNA structure constitutes the central point of the book, but it is set in the context of the entire life of Wilkins, who is now aged 86 and is Emeritus Professor of Biophysics at King's College, London.

I read Wilkins's life story with interest. His memoirs include the description of such difficult episodes as a divorce from his first wife Ruth, which happened shortly before the birth of their son and after only a few months of married life at Berkeley. Wilkins presents his general outlook on life as coming full circle during his adult years. We first meet him as a 1938 Cambridge graduate and an anti-war activist, and follow his metamorphosis into a member of an atomic bomb programme initially in Birmingham, UK, and then at Berkeley, California. It was

there that the news about the destruction of Hiroshima filled him with "a joyful sense of achievement". However, later that same day, a philosopher friend helped him to realize that this was a black day in the history of mankind. After the war, Wilkins returned to the UK and devoted himself to the study of genes but then, after receiving the Nobel Prize, he again became active in the anti-war movement. He became a member of the Pugwash organization, which brought prominent scientists and public figures from both sides of the Iron Curtain together to prevent a nuclear war by finding peaceful solutions to global problems.

However, most readers will be mainly interested in Wilkins's recollection of the events that led to the discovery of the structure of DNA. In the introduction and on the book's jacket we learn that the author's primary motivation for writing the autobiography was to respond to the accusations that Wilkins, Watson and Crick unfairly treated their female colleague Rosalind Franklin and that they appropriated her important data to deduce the DNA structure. These accusations were strongly formulated by Anne Sayre in her 1974 book, *Rosalind Franklin and DNA* (see *EMBO reports* 2: 181 (2001)). Wilkins presents the situation quite differently. We learn that it was Wilkins who suffered after the arrival of Franklin at King's College. Although he had started to study the structure of DNA fibres by X-ray diffraction, Franklin's arrival in the lab deprived him of a student, his best DNA samples, the best X-ray camera and generally pushed him out of his favourite research subject. Wilkins found this situation extremely unfair because it was he who had originally suggested to John Randall, the director of the laboratory, that Franklin should work on DNA rather than on proteins because of the X-ray expertise that she had gained in Paris. At the time, Wilkins attributed Franklin's dominant attitude to her pushiness and of course this did not help to establish a good relationship between them. Only several years later, after Franklin had died of cancer at the age of 37 and after Randall had retired, did Wilkins learn that Franklin had behaved exactly as directed in her employment letter. Randall

wrote to Franklin before her arrival in London, stating that she was to be the only person responsible for the X-ray DNA studies in the laboratory. In his book, Wilkins does not analyse why Randall preferred to make Franklin solely responsible for the X-ray work. Instead, Wilkins tells us that despite the presence of Franklin he was nevertheless advancing towards solving the DNA structure. Although it is not said directly, Wilkins gives the impression that if it had not been for Franklin, he probably would have solved the DNA structure before Watson and Crick.

The mythical DNA story contains the crucial moment in which Wilkins showed Watson a superb X-ray diffractogram that had been obtained by Franklin and whose clear pattern prompted Watson to build the correct DNA model. The accusation directed towards Wilkins is that this diffractogram was not yet published and that Wilkins was not supposed to show it to competitors. This particular event is described by Brenda Maddox in her well-researched biography *Rosalind Franklin: The Dark Lady of DNA* (see *EMBO reports* 4: 14 (2003)). We learn there that Watson was completely fascinated by the crystal-clear picture and that he and Wilkins had a long technical discussion about its interpretation during their dinner in Soho. Then, when Watson took the late train back to Cambridge, he drew the discussed diffraction pattern on the margin of his newspaper. Wilkins now presents a completely different version of the story in which the shown picture did not make any impression on Watson, who was in a great hurry during his brief visit and only had time to agree with Wilkins that "Chargaff's ratios are the key to the DNA structure". The intended message is quite clear to readers. It was not Franklin's data but Wilkins's idea that put Watson on the right track. Well, it is possible, but I'd rather believe that it was the unacknowledged picture obtained by Franklin that was the decisive factor in the discovery of the structure of DNA.

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