

DOROTHY MARY CROWFOOT HODGKIN
OM, FRS

Dorothy Mary Crowfoot was born in Cairo in 1910. Her father was an archaeologist with a special interest in the Sudan, an interest shared by her mother, who had trained as a botanist. Dorothy married Thomas Hodgkin in 1937 and they had three children, Luke, Elizabeth and Toby. Somehow she succeeded in finding ample time for her family without neglecting her research or other interests - as one of her three recreations listed in *Who's Who* she gave 'children', the others being archaeology and walking. She died at her home in Ilmington in Warwickshire on 29 July 1994. Thomas died in 1982.

Dorothy's interest in science was stimulated by Dr A F Joseph, the Sudan Government Chemist, who was a near neighbour in Khartoum, and in crystals by reading Sir William Bragg's book *Concerning the Nature of Things*, a gift from her mother on her fifteenth birthday. She read Chemistry at Somerville College, Oxford, where she began research in X-ray Crystallography but transferred to Cambridge to work with J D Bernal and complete her PhD. In Cambridge she took her first X-ray photographs of the protein insulin, a problem to which she returned several times before achieving success some thirty years later. Her first notable success after her return to Oxford, where she was to remain throughout her career (working in most inconvenient surroundings in the University Museum), was in determining the crystal structure of penicillin, in 1945. The molecular structure was unexpected, and some organic chemists were sceptical that she had got it right. When in 1948 she began work on the structure of vitamin B₁₂ (C₆₂H₈₈N₁₄O₁₄PCo) she took on a problem at least an order of magnitude greater than any seriously attempted at that time by X-ray techniques, but with the help of a small army of collaborators she achieved success after some ten years of effort. Again the molecular structure was unexpected, but this time there were no sceptics. As for penicillin, knowledge of the structure facilitated synthesis, to the eventual benefit of a great many people.

For these achievements she was awarded the Nobel Prize in Chemistry in 1964 and the Order of Merit in the following year, becoming only the second woman to receive this award, the first having been Florence Nightingale. A three volume collection of her published works with introductory essays by ten prominent crystallographers was recently published by the Indian Academy of Science.

The number of research students, visiting scientists and postdoctorals who worked with her must have approached one hundred. Women and overseas students were always well represented. Her best-known student was Margaret Roberts, later Margaret Thatcher, whose undergraduate research project was supervised by Dorothy, but who did not persevere with Chemistry! Despite being at opposite ends of the political spectrum, they were always on friendly terms. Indeed Dorothy, whose manner was gentle, kind and unassuming, had no enemies, political or otherwise, and was known as Dorothy to all and sundry.

She had a considerable interest in educational topics and popularising science, being President of the British Association in 1977-78, President of the International Union of Crystallography in 1972-75 and Chancellor of the University of Bristol for almost two decades from 1970. She was elected Hon FRSE in 1970. She enjoyed travel and was much in demand as a guest lecturer at International Conferences, including finally the Sixteenth Congress of the IUCr in Beijing in 1993, when she and Linus Pauling were given a great welcome. By then she was unfortunately severely affected by arthritis and confined to a wheelchair.

She was a devoted worker in the cause of world peace, was President of the Pugwash Conference for some years from 1976 and received the Lenin Peace Prize in 1987. Her other distinctions such as Honorary Fellowships and Honorary Degrees are too numerous to give here.

To quote Dr M F Perutz: 'She will be remembered as a great chemist, a saintly, gentle and tolerant lover of people and a devoted protagonist of peace'.

WILLIAM COCHRAN