

Book Reviews

RONALD W. CLARK, *The life of Ernst Chain—penicillin and beyond*, London, Weidenfeld & Nicolson, 1985, 8vo, pp.x, 217, illus., £14.95.

The appearance of this book means that the lives of the three major characters in the penicillin story have been well documented. Florey is served by three excellent biographies, while Macfarlane's book on Fleming is unlikely to be bettered. The fact that we have had to wait this long for a full biography of Chain to appear shows how his role in the development of penicillin has been underplayed. The subtitle of the late Ronald Clark's book succinctly describes his aim. While the penicillin story is central to the book, and will no doubt attract most interest, we also discover what happened to Chain after he was awarded the Nobel Prize at the relatively early age of thirty-nine.

The opening chapters describe Chain's early life in Germany, about which apparently little is known. Disgusted with the Nazi regime, he left Germany and arrived in England in 1933 and was taken under the wing of the Jewish community here. The young Chain is portrayed as a gifted pianist and linguist who found difficulty in deciding whether to pursue a career in science or music. After a short period at University College London, Chain moved on to work with Florey at Oxford. Even there he was uncertain of his future and might have moved on to Australia or Canada.

In the chapters devoted to the penicillin story, Clark covers familiar ground and gives us little that is new. He confirms, however, that the relationship between Chain and Florey was often less than smooth, a conflict of characters that the first two Florey biographies underplay. Indeed, there is a danger of an "Oxford myth" developing to set alongside the well-publicized "Fleming myth". For example, the impression is often given that Florey and Chain's work on penicillin was begun purely as a scientific exercise and had nothing to do with a desire to help cure infections. However, there is evidence to suggest that Florey, at least, was more single-minded in his approach to penicillin. We know that he was aware of C. G. Paine's pioneering work on the therapeutic use of crude penicillin as early as 1932. From correspondence which I have recently received, it seems that Florey mentioned Paine's work in his lectures at Oxford as late as 1936. A letter in the *Australian Journal of Medicine* (*Aust. J. Med.*, 1974, 1:196) states that in 1938, Florey and Sir Hugh Cairns discussed the need for the development of an antibacterial agent in case of a future war. Clearly, Florey knew a great deal about penicillin before he suggested that Chain should concentrate his efforts here, rather than on gramicidin or pyocyanase. The second part of the "Oxford myth" suggests that Chain and Florey formed a team, which worked together in harmony to purify penicillin and demonstrate its miraculous curative powers. Clark shows us that was far from true. Chain, it seems, was frequently at odds with both Florey and Heatley. Even the crucial mouse tests appear controversial, since it seems that Chain had to badger Florey to take an interest and test his purified penicillin extracts. In fact, Chain seems to have felt hard done by and neglected; so while we usually think that Fleming stole the limelight from Florey and Chain, there is an undercurrent here which suggests that Chain failed to get his full due. Chain also appears to have felt aggrieved by the idea that there was an Oxford team busily working together to purify penicillin. Indeed, he never agreed on the accuracy of the historical account of the Oxford work as portrayed in the major monograph *Antibiotics* which was written by Florey and co-workers. In fact, it was only when Chain moved to Rome to form his own research team that both he and Florey realized that the bitterness between them up to 1948 had got out of hand. No doubt Chain himself was the source of much of this disagreement, since he seems to have felt an outsider and throughout his life he was involved with battles, real and imaginary, with the British scientific establishment.

I found Clark's description of Chain's post-penicillin work particularly interesting, perhaps because, apart from Abraham's excellent obituary of Chain (*Bio. Mem. R. Soc. Lond.*, 1983, 29: 43–91), it has been largely untold. Chain left Oxford for Rome and began work on the structure of insulin and on the development of semi-synthetic penicillins. Even here, he was never far from disagreement and controversy, and when the director of the institute in which he was working was arraigned for misappropriating funds, Chain became involved when a Public Prosecutor (wrongly) accused him of selling abroad patents which belonged to Italy!

On his return to England, Chain took up the prestigious post at Imperial College, London,

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complete with a luxurious penthouse flat. Plagued with funding troubles, he continued his remarkable scientific career, diversifying into studies of fungal viruses and proteins and ergot metabolites. Clark emphasizes that Chain's Jewish faith had a profound effect on both his moral and scientific outlook. Chain eventually received the recognition and honours he deserved and toured the world as a popular speaker. Even at the end, however, he was disagreeing with authority, this time over who was to succeed him as Professor at Imperial College. This controversy centred around Chain's views on molecular biology, which he thought had little to give to medical research and was receiving too much attention and funds.

This is probably the only biography of Chain we are likely to see, at least in the near future. Clark has written a lucid and very readable account of Chain's life, even if one feels a certain lack of involvement with his subject. Although of no worry to the general reader, the medical historian will also find the lack of footnotes or complete bibliography very frustrating. Readers of this journal may like to know that the Chain archives are in fact in the Contemporary Medical Archives Centre at the Wellcome Institute. The penicillin story continues to excite interest. As they used to say in the movies "all human life is here". Clark's book adds additional colour to this already colourful story.

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