

Book Reviews

some time, he was indeed Almighty, and the writer has reason to be grateful, as it took Todd, then Chairman of the Science Research Council chemistry panel, only three weeks to get funding for the first n.m.r. machine purchased by the S.R.C.

In his foreword, Todd gives as his reason for writing this autobiography the desire to provide the type of information about himself which, as a writer of biographical memoirs, he has found it difficult to obtain about fellow-scientists. In the present volume he covers his life from cradle in a Glasgow tenement (albeit "superior red sandstone") via early years in pre-war and partly pre-Hitler Germany, Oxford, Edinburgh, the Lister Institute, and Pasadena to a Chair at Manchester at the age of thirty, on to the Chair of Organic Chemistry in Cambridge six years later, eventually to the Nobel Prize, the Presidency of the Royal Society, the Chemical Society, the Society of Chemistry and Industry, etc., and finally the House of Lords.

In a chemist's autobiography one might have hoped to get some insight into the development of ideas, for specific clues to the working of the mind of someone in the forefront of international chemistry during a crucial period in its development and how he actually operated in science. Alas, the author tells us little of the inspired leaps of imagination he must have made and their immediate and more remote sources, although he does tell us something of the development of his own research on phosphorylation and nucleotide coenzymes that won him a Nobel Prize in 1957. Anyone wishing to get a vivid picture of how an outstanding chemist thinks and operates would be better advised to read the fascinating, indeed riveting, accounts of the life and works of Gilbert Newton Lewis of the University of California recently published in the *Journal of Chemical Education*, 1984, **61**: 2–21, 92–123, 185–215.

Somewhat more interesting are Todd's accounts of the German PhD system in the 1930s and the politics—and what politics!—surrounding the organization of and appointments to chairs in Cambridge.

Although he knew personally most of the world's leading organic chemists of his time, Todd tells us little other than trivia, and unless the reader is a chemist, he might have some difficulty in finding out exactly who these people are in any case. In 'Chance and design in research' we get a sideways look at the development of Pauling's α -helix and of Watson and Crick's double helix model as reflected in relations (apparently largely non-existent) between the physics and chemistry departments in Cambridge.

This disappointing book is really only 204 pages long (and grossly overpriced), since there are six appendices readily available elsewhere at no cost. These are Todd's presidential address to the British Association (*Advancement of Science* 1970, **27**: 70) and extracts from his Anniversary Address to the Royal Society (*Proc. R. Soc. Lond.*, 1977, **196B**: 7; 1978, **200B**: x; 1979, **365A**: xii; 1980, **369A**: 299; 1980, **211A**: 6).

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R. G. W. ANDERSON, *The Playfair Collection and the teaching of chemistry at the University of Edinburgh 1713–1858*, Edinburgh, Royal Scottish Museum, 1978, 4to, pp. viii, 175, illus., £4.50 (paperback).

A.D.C. SIMPSON (editor), *Joseph Black 1728–99. A commemorative symposium*, Edinburgh, Royal Scottish Museum, 1982, 4to, pp. viii, 69, illus., £4.00 + 50p postage (paperback).

Happy is the reviewer with two such excellent publications celebrating the 250th anniversary of the birth of Joseph Black to hand! Anderson's book serves two purposes. The first part is a history of the teaching of chemistry at Edinburgh in its "practical aspects", that is in relation to the facilities and pedagogic tools available to the professoriate. The second part is a catalogue of the apparatus constituting the Playfair Collection at the Royal Scottish Museum. Presented to the then Industrial Museum of Scotland by Lyon Playfair on his accession to the Edinburgh chair in 1858, the collection contains apparatus belonging to his predecessors and informs Anderson's analysis in the first part. This is an approach which historians of chemistry could use more often with profit.

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The symposium papers edited by Simpson will be a valued source for students of Black. The eight papers offer a number of insights on various aspects of Black's career. Robert Anderson provides a handy outline biography; Christopher Lawrence analyses Black's personal and intellectual links with Hume and Adam Smith, as well as contemporary natural philosophers; Henry Guerlac presents a stimulating evaluation of Black's work on latent heat; Andrew Doig examines Black's abilities as a physician. The institutional context of Black's work is explored by two papers: one on Glasgow by Peter Swinbank, and one on Edinburgh by W.P.Doyle. W.A.Cole provides an invaluable reference tool for locating manuscripts of Black's lectures, while John Christie queries the authenticity of Robison's edition of the lectures. He argues convincingly that it is Robison's view of what Black ought to have said, rather than what Black himself said.

It is to be hoped that both books will be rather more readily available than museum publications sometimes are.

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S. GRISOLIA, C. GUERRI, F. SAMSON, S. NORTON, and F. REINOSO-SUAREZ (editors), *Ramon y Cajal's contributions to the neurosciences*, Amsterdam, Elsevier, 1983, 8vo, pp.xviii, 267, illus., Dfl. 190.00.

Was it not Geoffrey Jefferson who designated neurology's three saints as Jackson, Cajal, and Sherrington, with Gowers and Charcot only a little lower in the hagiolatry? The works of four of these are universally known, but Cajal, alas, wrote in Spanish. His monumental *Degeneration and regeneration of the nervous system* appeared in 1913–14, thanks to the generosity of Argentinian colleagues. Not until 1928 was it translated into English. Cajal's two-volume autobiography was rendered into English in 1937. His life and works were made known to us in the excellent appreciation by Fielding H. Garrison (1939), while ten years later Dorothy Cannon wrote her outstanding work entitled *Explorer of the human brain*, with a memoir by Sherrington.

We welcome, therefore, this little book, which represents the proceedings of a symposium held in 1982 in Valencia to mark the centenary of Cajal's career. The majority of the papers are by Spanish research workers, but there are also at least four from Great Britain and others from the USA. Neuroanatomists will be delighted with this well-illustrated volume which brings up to date the seminal work of Cajal, as amplified by such modern techniques as electron microscopy and the computer sciences.

Medical historians will be particularly interested in the personal memories as recorded by R. Martínez Pérez, as well as the account by F. Tello Valdivieso of some aspects of the master's personality. Unfortunately, much which would particularly appeal to the historian is left unsaid. Some will recall the meeting in Madrid in 1953 marking the 101st anniversary of his birth. An unfortunate failure in the city's electricity supply obliged Russell Brain to finish his address with the aid of candles and hurricane lamps.

Not only was Ramon y Cajal a histologist of genius and dedication, but he was an artist of precision and a philosopher full of wise saws and modern instances. As is unfortunately so often the case, Cajal had to share his Nobel prize. Golgi, the other recipient, hogged the ceremony with a pompous and verbose self-eulogy, leaving little time for the modest Cajal to express his grateful thanks.

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JEROME O. NRIAGU, *Lead and lead poisoning in antiquity*, New York and Chichester, John Wiley, 1983, 8vo, pp. xiii, 437, £47.50.

This book is a gathering together of a great host of material that has been written about lead in the ancient world; there has been little attempt to go back to primary sources and much of the material is reviewed in an uncritical fashion.

The first chapter is a curious hotchpotch of unconnected items, which has almost no